[redacted] 12557 O

College of Physicians of Philadelphia

Lewis Library

Sam.l Lewis M.D.

Presented by

Pathological Society of Phil.a

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

# TRANSACTIONS

OF THE

# PATHOLOGICAL SOCIETY

# OF PHILADELPHIA.

VOLUME XV.

*CONTAINING THE REPORT OF THE PROCEEDINGS FROM SEPTEMBER, 1889, TO JULY, 1891.*

EDITED BY

ALLEN J. SMITH, M.D.,

ASSISTANT DEMONSTRATOR OF MORBID ANATOMY AND PATHOLOGICAL HISTOLOGY IN THE UNIVERSITY OF PENNSYLVANIA; PATHOLOGIST TO THE PRESBYTERIAN HOSPITAL; VISITING PHYSICIAN AND PATHOLOGIST TO THE PENNSYLVANIA STATE ASYLUM FOR THE INSANE AT NORRISTOWN; RECORDER OF THE SOCIETY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA. LIBRARY. MAR 11 1892

PHILADELPHIA:
PRINTED FOR THE SOCIETY BY WM. J. DORNAN.
1891.

# PREFACE.

The editor of the present volume, which comprises the Transactions of the Society from September, 1889 to July, 1891, is unfortunately unable to present the records of about fifty specimens, shown before the Society between September, 1889, and February, 1890, because of circumstances which at that period were not under his control. A number of these have, however, been placed in the list of card specimens, and may thus be at least partially preserved to memory.

Among the papers failing of publication, is that of Dr. John Guitéras, read at the semi-annual conversational meeting, in October, 1889, its title being "Some Features of Southern Pathology."

# CONTENTS.


| | PAGE |
|---|---|
| PREFACE | ii |
| LIST OF FORMER PRESIDENTS | iv |
| LIST OF OFFICERS AND COMMITTEES ELECTED 1889 | v |
| LIST OF OFFICERS AND COMMITTEES ELECTED 1890 | vi |
| LIST OF MEMBERS | vii |
| LIST OF CORRESPONDING MEMBERS | xxiii |
| LIST OF SPECIMENS EXHIBITED AT THE MEETINGS OF THE SOCIETY | xxv |

| | |
|---|---|
| ADDRESSES OF RETIRING PRESIDENTS | 1 |
| DISEASES, ETC., OF THE OSSEOUS SYSTEM | 7 |
| DISEASES, ETC., OF THE DIGESTIVE SYSTEM | 17 |
| DISEASES, ETC., OF THE CIRCULATORY AND BLOOD-MAKING SYSTEM | 111 |
| DISEASES, ETC., OF THE ORGANS OF RESPIRATION | 165 |
| DISEASES, ETC., OF THE GENITO-URINARY APPARATUS | 172 |
| DISEASES, ETC., OF THE NERVOUS SYSTEM | 241 |
| TUMORS NOT OTHERWISE CLASSIFIED | 290 |
| MISCELLANEOUS | 324 |
| TECHNIQUE | 354 |
| CARD SPECIMENS | 365 |


12557

# FORMER PRESIDENTS.

SAMUEL D. GROSS, M.D., LL.D., D.C.L. Oxon., LL.D. Cantab., elected 1857.

RENÉ LA ROCHE, M.D., elected 1858.

ALFRED STILLÉ, M.D., elected 1859, '61, and '62.

EDWARD HARTSHORNE, M.D., elected 1860 and '63.

J. M. DA COSTA, M.D., elected 1864, '65, and '66.

JOHN H. PACKARD, M.D., elected 1867 and '68.

S. WEIR MITCHELL, M.D., elected 1869.

JOHN ASHHURST, Jr., M.D., elected 1870.

JAMES H. HUTCHINSON, M.D., elected 1871 and '72.

WILLIAM PEPPER, M.D., elected 1873.

H. LENNOX HODGE, M.D., elected 1876.

S. W. GROSS, M.D., elected 1879.

JAMES TYSON, M.D., elected 1882 and '83.

E. O. SHAKESPEARE, M.D., elected 1884.

J. C. WILSON, M.D., elected 1885 and '86.

F. P. HENRY, M.D., elected 1887 and '88.

HENRY F. FORMAD, M.D., elected 1889 and '90.

# OFFICERS AND COMMITTEES

OF THE

# PATHOLOGICAL SOCIETY OF PHILADELPHIA.

(Elected at the annual meeting, October, 1889.)

---

**President.**

HENRY F. FORMAD, M.D.

**Vice-Presidents.**

JOHN H. MUSSER, M.D.,
H. R. WHARTON, M.D.,
ARTHUR V. MEIGS, M.D.,
JOHN GUITÉRAS, M.D.

**Secretary.**

FREDERICK A. PACKARD, M.D.

**Recorder.**

W. E. HUGHES, M.D.

**Treasurer.**

M. S. FRENCH, M.D.

**Curator.**

ALLEN J. SMITH, M.D.

**Committee on Publication.**

G. E. De SCHWEINITZ, M.D., JAMES TYSON, M.D.,
H. A. HARE, M.D., F. P. HENRY, M.D.

**Committee on Morbid Growths.**

M. H. FUSSEL, M. D., G. E. De SCHWEINITZ, M.D.,
J. P. C. GRIFFITH, M.D., ARTHUR V. MEIGS, M.D.,
G. G. DAVIS, M.D., ALLEN J. SMITH, M.D.,
W. E. HUGHES, M.D.

**Business Committee.**

F. P. HENRY, M.D., D. J. M. MILLER, M.D.,
J. B. ROBERTS, M.D., J. H. MUSSER, M.D.,
J. B. DEAVER, M.D.

# OFFICERS AND COMMITTEES

OF THE

# PATHOLOGICAL SOCIETY OF PHILADELPHIA.

(Elected at the annual meeting, October, 1890.)

---

**President.**

HENRY F. FORMAD, M.D.

**Vice-Presidents.**

JOHN GUITÉRAS, M.D.,
ARTHUR V. MEIGS, M.D.,
JOHN B. DEAVER, M.D.,
JOHN H. MUSSER, M.D.

**Secretary.**

FREDERICK A. PACKARD, M.D.

**Recorder.**

ALLEN J. SMITH, M.D.

**Treasurer.**

M. S. FRENCH, M.D.
(Resigned December 11, 1890.)
HENRY BEATES, M.D.

**Curator.**

ALLEN J. SMITH, M.D.
(Resigned October 9, 1890.)
J. LEFFINGWELL HATCH, M.D.
(Elected October 9, 1890.)

**Committee on Publication.**

G. E. DE SCHWEINITZ, M.D., JAMES TYSON, M.D.,
H. A. HARE, M.D., FREDERICK P. HENRY, M.D.

**Committee on Morbid Growths.**

W. L. COPLIN, M.D., ARTHUR V. MEIGS, M.D.,
ERNEST LAPLACE, M.D., J. L. HATCH, M.D.,
M. H. WILLIAMS, M.D., ALLEN J. SMITH, M.D.,
E. L. VANSANT, M.D.

**Business Committee.**

F. P. HENRY, M.D., F. A. PACKARD, M.D.,
J. H. MUSSER, M.D., JOHN GUITÉRAS, M.D.,
J. B. DEAVER, M.D.

# LIST OF MEMBERS.

Members marked O. M. are those originating the Society.
Members marked N. R. are non-resident.

ELECTED

1890 Adams, J. Howe, 252 South Seventeenth Street.
1889 Adler, L. H., 41 North Twelfth Street.
1857 Agnew, D. Hayes, Emeritus Professor of Surgery in the University of Pennsylvania, 1601 Walnut Street. (O. M.)
1871 Alison, Robert H., resigned 1884.
1864 Allen, Harrison, resigned December 11, 1879.
1869 Allis, Oscar H., resigned February 24, 1881.
1887 Allyn, Herman B., 737 North Forty-first Street.
1889 Anders, J. M., Professor of Practice of Medicine in Medico-Chirurgical College, 1637 North Broad Street.
1865 Andrews, Thomas H., forfeited membership by non-payment of dues, 1888.
1871 Ashbridge, William, resigned December 11, 1879.
1867 Ashhurst, Francis, Mount Holly, New Jersey. (N. R.)
1861 Ashhurst, John, Jr., Professor of Surgery in the University of Pennsylvania, 2000 Delancey Place.
1863 Ashhurst, Samuel, resigned December 22, 1887.
1891 Ashton, Thomas G., 222 South Eighth Street.
1871 Atlee, Washington L., Jr., forfeited membership by non-payment of dues, December 10, 1874.

1866 Bache, T. Hewson, resigned December 27, 1883.
1878 Baer, B. F., resigned.
1887 Baker, G. F., 1818 Spruce Street.
1888 Baldy, J. M., 330 South Seventeenth Street.
1888 Balliet, Tilghman M., 3705 Powelton Avenue.
1876 Barr, J. W., forfeited membership by non-payment of dues, December 8, 1881.
1880 Bartholow, Roberts, 1525 Locust Street.
1868 Bartles, Wm. H., Insane Department Pennsylvania Hospital, West Philadelphia. (N. R.)

ELECTED

1883 Barton, Isaac, 111 North Sixteenth Street.
1869 Barton, J. M., 1344 Spruce Street.
1885 Beates, Henry, Jr., 1421 Girard Avenue.
1873 Beecher, A. C. W., 523 South Ninth Street.
1870 Bell, J. R. F., forfeited membership by non-payment of dues, December 10, 1874.
1871 Bennett, Wm. H., 332 South Fifteenth Street.
1863 Benton, C. H. (N. R.)
1887 Berens, Bernard, 2006 Arch Street.
1875 Bernardy, Eugene P., resigned September 22, 1881.
1870 Bertholet, Robert Morris, died 1882.
1871 Betts, Thomas, Branchtown, Pa. (N. R.)
1890 Birney, H. H., 914 Belmont Avenue.
1860 Bishop, C. S., died.
1866 Black, J. J., New Castle, Delaware. (N. R.)
1863 Boardman, C. H., St. Paul, Minnesota. (N. R.)
1889 Bobb, W. G., 2445 North Sixth Street.
1886 Bodamer, George A., 1219 North Fifteenth Street.
1880 Bœnning, Henry C., forfeited membership by non-payment of dues, April 14, 1882.
1857 Boker, Charles S., 212 South Fifteenth Street. (O. M.)
1868 Bolles, Lucius S., died August 15, 1873.
1889 Bower, C. L., 26 South Eighteenth Street.
1883 Boyd, George M., 1700 North Sixteenth Street.
1877 Bradford, T. Hewson, resigned December 23, 1880.
1873 Bray, Daniel, forfeited membership by non-payment of dues, December 8, 1881.
1883 Breinig, P. B., Bethlehem, Pa. (N. R.)
1890 Bricker, William H., 227 North Twenty-second Street.
1857 Brinton, John H., Professor of the Practice of Surgery and Clinical Surgery in the Jefferson Medical College, 1423 Spruce Street. (O. M.)
1891 Brooke, Benjamin. (N. R.) U. S. Army.
1889 Brooks, J. W., 1220 North Front Street.
1890 Brown, James M., 3813 Baring Street.
1874 Brubaker, A. P., 1210 Race Street, forfeited membership by non-payment of dues, January 26, 1888.
1874 Bruen, E. T., died March 31, 1889.
1871 Buck, William Penn, resigned October 23, 1873.

ELECTED

1867 Burnett, Charles H., resigned December 8, 1881.
1887 Burr, Charles W., 1330 Spruce Street.

1890 Carter, W. S., Presbyterian Hospital.
1872 Cathcart, James H., died March 5, 1874.
1879 Cathcart, T. H., died March 28, 1882.
1887 Cattell, H. W., 3709 Spruce Street.
1890 Cerna, David, University of Pennsylvania.
1887 Chambers, G. H., 739 North Seventeenth Street. (Resigned.)
1891 Charlton, W. S., 1328 Pine Street.
1871 Cheston, C. Morris, West River, Maryland. (N. R.)
1865 Cheston, D. Murray, resigned December 13, 1883.
1887 Chrystie, Walter, Bryn Mawr, Pennsylvania.
1871 Clark, Leonardo S., resigned November 29, 1883.
1866 Cleemann, Richard A., 2135 Spruce Street.
1872 Cohen, J. Solis, Professor of Diseases of the Throat and Chest in the Philadelphia Polyclinic and School for Graduates, 1431 Walnut Street.
1883 Cohen, S. Solis, 219 South Seventeenth Street.
1887 Collins, James, 704 Franklin Street.
1890 Conrad, J. Reed, 109 South Twenty-second Street.
1890 Coplin, W. M. L., 310 Catharine Street.
1869 Corbit, William B., Washington, D. C. (N. R.)
1877 Cruice, R. B., resigned December 22, 1887.
1871 Curtin, Roland G., 22 South Eighteenth Street.

1890 Da Costa, J. C., 2050 Locust Street.
1857 Da Costa, J. M., Professor of the Theory and Practice of Medicine in the Jefferson Medical College, 1700 Walnut Street. (O. M.)
1885 Daland, Judson, 319 South Eighteenth Street.
1859 Darby, J. T., died.
1876 Darlington, W. L. (N. R.)
1857 Darrach, James, 5021 Green Street, Germantown. (O. M.)
1868 Darrach, William, died January 28, 1881.
1890 Davis, C. N., 2107 Chestnut Street.
1887 Davis, E. P., resigned December 5, 1888.
1882 Davis, G. G., 1817 Mount Vernon Street.
1890 Davis, J. A., 527 South Forty-second Street.
1889 Deaver, H. C., 1629 Oxford Street.

ELECTED

1885 Deaver, J. B., Assistant Professor of Anatomy in the University of Pennsylvania, 120 South Eighteenth Street.
1877 Deaver, R. W., resigned January 27, 1887.
1882 Dercum, F. X., 636 North Eighth Street.
1882 De Schweinitz, G. E., 1401 Locust Street.
1891 Dietrich, George, 1232 North Fifth Street.
1885 Dock, George, resigned December 5, 1888.
1886 Donges, John W., Camden, N. J.
1888 Downs, Andrew J., 1218 North Eighteenth Street.
1889 Downs, Norton, Pennsylvania Hospital.
1877 Drysdale, T. M., 1531 Arch Street.
1866 Duer, Edward L., 1606 Locust Street.
1870 Duhring, L. A., resigned November 9, 1882.
1876 Dulles, C. W., 4101 Walnut Street.
1883 Dunn, T. D., West Chester, Pennsylvania. (N. R.)
1883 Dunmire, G. B., 1116 Arch Street.
1860 Dunton, W. R., 5059 Germantown Avenue, Germantown.
1863 Dyer, Ezra, Pittsburg, Pa. (N. R.)

1883 Edwards, J. F., forfeited membership by non-payment of dues, June 26, 1888.
1882 Edwards, W. A., San Diego, California. (N. R.)
1885 Egbert, J. C., Wayne, Pennsylvania. (N. R.)
1891 Egbert, Seneca, 4808 Springfield Avenue.
1875 Engel, Hugo, forfeited membership by non-payment of dues, February 23, 1882.
1891 Eshner, A. A., 853 North Fifth Street.
1876 Eskridge, J. T., Colorado Springs, Colorado. (N. R.)

1881 Fenton, T. H., 1335 Arch Street.
1857 Fischer, Emil, 729 North Sixth Street. (O. M.)
1863 Fish, Augustine, H., died August 3, 1872.
1876 Fisher, Henry M., 317 South Twelfth Street.
1890 Flick, L. J., 736 Pine Street.
1857 Forbes, William S., forfeited membership by non-payment of dues.
1869 Ford, William H., 1622 Summer Street.
1878 Formad, H. F., 3535 Locust Street.
1871 Fox, Charles, resigned September 10, 1884.
1888 Fox, J. M., Torresdale.

ELECTED

1886 Freeman, W. J., 2034 Chestnut Street.
1889 Frese, Carl, German Hospital.
1880 French, M. S., 1437 Spruce Street.
1890 Friebis, George, 1720 Chestnut Street.
1890 Füchelis, P., 216 Franklin Street.
1885 Fussell, M. H., 189 Green Lane, Manayunk.

1868 Garretson, James E., resigned November 22, 1883.
1883 Garrett, E. F., 5103 Germantown Avenue, Germantown.
1890 Geissel, A. E., 719 North Fifth Street.
1871 Gerhard, George S., Ardmore, Pennsylvania. (N. R.)
1870 Getchell, Frank H., 1432 Spruce Street.
1890 Gibb, Joseph C., 817 Franklin Street.
1877 Gilliard, Louis, died November, 1878.
1890 Gleason, E. Baldwin, 1204 Walnut Street.
1882 Godey, H. E., N. E. corner Nineteenth and Spruce Streets.
1877 Goldsborough, C. B. (N. R.)
1866 Goodell, William, Clinical Professor of Diseases of Women in the University of Pennsylvania, 1418 Spruce Street.
1886 Goodell, W. C., 1418 Spruce Street.
1868 Goodman, H. Ernest, resigned February 23, 1882.
1868 Graham, James, resigned January 9, 1879.
1890 Grayson, C. P., 122 South Forty-second Street.
1867 Grier, Matthew J., 1531 Spruce Street.
1883 Griffith, J. P. C., Clinical Professor of Diseases of Children, University of Pennsylvania, 123 South Eighteenth Street.
1868 Gross, Ferdinand H., resigned September 25, 1890.
1885 Gross, Onan B., 700 Market Street, Camden, New Jersey.
1857 Gross, Samuel D., died May 6, 1884. (O. M.)
1858 Gross, Samuel W., died April 16, 1889.
1869 Grove, John H., resigned September, 1890.
1862 Gruel, Theodore H. E., resigned December 12, 1889.
1874 Guitéras, John, Professor of Pathology in the University of Pennsylvania, 3710 Sansom Street.
1890 Gummey, Frank B., Morton and High Streets, Germantown.

1884 Haehlen, W. F., 1421 North Broad Street.
1871 Hale, George J., forfeited membership by non-payment of dues, March 23, 1876.
1857 Hall, A. Douglass, resigned October 9, 1873. (O. M.)

ELECTED

1890 Hall, William S., Haverford College.
1886 Hamaker, W. D., Meadville, Pennsylvania. (N. R.)
1875 Hand, Frank C., died September 1, 1881.
1885 Hare, Hobart A., Professor of Therapeutics in the Jefferson Medical College, 222 South Fifteenth Street.
1866 Hare, Horace Binney, died March 21, 1879.
1868 Hargadine, R. W. (N. R.)
1859 Harlan, George C., resigned January 12, 1882.
1874 Harris, Charles M., died.
1858 Harris, Robert P., resigned January 9, 1873.
1890 Harrison, W. H., Pennsylvania Hospital for Insane.
1881 Hart, R. H., forfeited membership by non-payment of dues.
1857 Hartshorne, Edward, died June 29, 1885. (O. M.)
1859 Hartshorne, Henry, resigned October 12, 1864.
1890 Hartzell, M. B., 3725 Spring Garden Street.
1867 Hassler, Ferdinand A., resigned February 9, 1871.
1890 Hatch, John L., 3615 Locust Street.
1869 Hatfield, Nathan L., died.
1868 Hays, I. Minis, resigned January 13, 1881.
1890 Hazel, F. B., 841 North Broad Street.
1879 Hazlehurst, S. F., Colorado Springs, Col. (N. R.)
1873 Hearn, Joseph, 1120 Walnut Street.
1890 Heil, U. S. G., 4943 Lancaster Avenue.
1870 Henry, Frederick P., Professor of Practice of Medicine in the Woman's Medical College, 1635 Locust Street.
1866 Herbert, Theodore. (N. R.)
1879 Hess, Robert, resigned January 12, 1882.
1857 Hewson, Addinell, forfeited membership by non-payment of dues, December 22, 1881. (O. M.)
1880 Hewson, Addinell, Jr., 350 South Sixteenth Street.
1874 Hickman, N. B., forfeited membership by non-payment of dues, December 8, 1881.
1890 Hinkle, F., Columbia, Pennsylvania.
1884 Hinsdale, Guy, resigned January, 1891.
1889 Hirsh, A. B., 1730 Girard Avenue.
1887 Hirst, Barton Cooke, Professor of Obstetrics in the University of Pennsylvania, 248 South Seventeenth Street.
1858 Hodge, H. Lenox, died June 10, 1881.
1883 Hoelly, G. H., forfeited membership by non-payment of dues.
1871 Hoffman, Washington Atlee, died September 20, 1874.

ELECTED

1886 Holland, J. W., resigned October 25, 1888.
1890 Holmes, E. W., 1523 Green Street.
1860 Hopkins, Henry St. George. (N. R.)
1876 Hopkins, W. B., resigned October 14, 1880.
1877 Horwitz, Theodore, died December 12, 1877.
1870 Houston, James P. S., Savannah, Georgia. (N. R.)
1891 Howard, C. E., 508 South Tenth Street.
1866 Howe, Herbert M., resigned February 28, 1878.
1859 Hoyt, William D. (N. R.)
1891 Hughes, D. E., Philadelphia Hospital.
1882 Hughes, W. E., 3726 Baring Street.
1879 Huidekoper, R. S., resigned October 28, 1880.
1857 Humphries, George H., New York City. (O. M., N. R.)
1868 Hunter, Charles T., resigned October 14, 1880.
1870 Hutchins, E. R. (N. R.)
1858 Hutchinson, James H., died December 27, 1889.
1890 Hutzell, J. C., 707 North Fifth Street.

1866 Ingham, James V., resigned December 11, 1879.
1866 Ingram, T. D., forfeited membership by non-payment of dues, December 8, 1881.
1890 Izard, William, Camden, New Jersey.

1891 Jamar, J. H., Elkton, Maryland. (N. R.)
1874 Jamison, Edward, St. Louis, Missouri. (N. R.)
1890 Jarrett, Henry, Camden, New Jersey.
1866 Jenks, William, died October 31, 1881.
1875 Johnson, Russell H., resigned December 8, 1881.
1891 Jones, Charles J., 1720 North Nineteenth Street.
1883 Judd, L. D., 3603 Powelton Avenue.
1885 Jurist, L. J., 839 North Broad Street.

1859 Kane, John K., Wilmington, Delaware. (N. R.)
1857 Kealer, William, resigned January 28, 1875. (O. M.)
1874 Keating, John M., resigned March, 1891.
1857 Keating, William V., forfeited membership by non-payment of dues, September 14, 1864. (O. M.)
1866 Keen, William W., resigned December 9, 1886.
1875 Kelly, Joseph V., 4257 Main Street, Manayunk.
1890 Ketcham, S. Rush. (N. R.)

ELECTED

1884 Kilduff, Robert, resigned December 9, 1886.
1889 Kimmell, Louis J. C., died 1890.
1858 King, William, died.
1888 Kirby, Ellwood R.
1879 Kirkbride, J. J., resigned December 13, 1888.
1890 Kneass, Samuel S.
1869 Knight, Samuel R., resigned October 28, 1880.

1867 Lambdin, A. C., forfeited membership by non-payment of dues, December 10, 1874.
1871 Landis, Henry G., died.
1890 Laplace, Ernest, Professor of Pathology in Medico-Chirurgical College, 1617 Arch Street.
1872 La Roche, C. Percy, Nice, France. (N. R.)
1857 La Roche, Rene, died December 9, 1872. (O. M.)
1879 Leach, A. L., forfeited membership by non-payment of dues, December 22, 1880.
1869 Leaman, Henry, 828 North Broad Street.
1860 Lee, Charles C., New York City. (N. R.)
1882 Lee, J. G., resigned September, 1883.
1861 Leedom, John M., died.
1888 Leidy, Joseph, Jr.
1887 Leopoldt, Isaac, 1518 Franklin Street.
1857 Levick, James J., resigned October 13, 1861. (O. M.)
1868 Lewis, Francis W., 2016 Spruce Street.
1869 Lewis, Fred. W., died 1873.
1885 Lewis, George T., resigned December 13, 1888.
1875 Lewis, Morris J., 1316 Locust Street.
1857 Lewis, Samuel, resigned December 13, 1888. (O. M.)
1891 Lincoln, William R., 1723 North Eighteenth Street.
1877 Little, Willian S., died February 17, 1887.
1859 Livezy, Edward, forfeited membership by non-payment of dues, September 14, 1864.
1886 Lloyd, James Hendrie, 200 South Fortieth Street.
1876 Loder, P. E., forfeited membership by non-payment of dues, February 9, 1882.
1886 Longaker, D., 652 North Eighth Street.
1873 Longenecker, Jerome, forfeited membership by non-payment of dues, 1875.
1875 Longstreth, Morris, 1416 Spruce Street.

ELECTED

1870 Loughlin, J. Eneu, forfeited membership by non-payment of dues, May 9, 1878.

1882 MacConnell, W. G., forfeited membership by non-payment of dues, 1888.
1873 MacCoy, A. W., 1415 Walnut Street.
1890 Mallet-Prevost, W. (N. R.)
1874 Mann, Charles H. (N. R.)
1867 Markoe, James, died March, 1884.
1887 Martin, Edward, Clinical Professor of Genito-Urinary Surgery, University of Pennsylvania, 415 South Fifteenth Street.
1868 Martin, George. (N. R.)
1874 Matteson, Charles C., died.
1865 Maury, Frank F., died 1879.
1870 Maxwell, J. G., forfeited membership by non-payment of dues, December 10, 1874.
1866 McArthur, J. A., forfeited membership by non-payment of dues, December 8, 1881.
1861 McCall, C. A., resigned.
1880 McClellan, G., 1352 Spruce Street.
1868 McClure, W. W., resigned September 10, 1878.
1884 McIlvaine, E. S., resigned December 11, 1884.
1890 McKelway, George I., 255 South Seventeenth Street.
1864 Mears, J. Ewing, 1429 Walnut Street.
1873 Meigs, Arthur V., 1322 Walnut Street.
1857 Meigs, John Forsythe, died December 16, 1882. (O. M.)
1874 Miller, C. K. I., died 1878.
1882 Miller, D. J. M., 238 South Twenty-first Street.
1889 Miller, J. S., 844 N. Nineteenth Street.
1878 Mills, C. K., Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and School for Graduates, 1909 Chestnut Street.
1885 Mitchell, James, forfeited membership by non-payment of dues.
1884 Mitchell, J. K., 211 South Seventeenth Street.
1857 Mitchell, S. Weir, resigned. (O. M.)
1876 Montgomery, E. C., resigned January 11, 1883.
1857 Morehouse, George R., 2033 Walnut Street. (O. M.)
1885 Morrison, William H., Holmesburg, Pennsylvania. (N. R.)
1887 Morton, S. W., 110 South Eighteenth Street.

ELECTED

1857 Morton, T. G., forfeited membership by non-payment of dues, September 14, 1864. (O. M.)
1885 Morton, T. S. K., resigned January 1, 1891.
1859 Moss, William, resigned December 10, 1885.
1871 Muhlenberg, Frank, Reading, Pennsylvania. (N. R.)
1869 Müller, August F., 4753 Green Street, Germantown.
1880 Musser, J. H., Assistant Professor of Clinical Medicine in the University of Pennsylvania, 229 South Fortieth Street.
1873 Musser, M. B., died March, 1888.
1869 Mustin, J. Burton, died 1871.
1890 Mutchlock, G. A., 848 Wharton Street.

1869 Nancrede, C. B. (N. R.)
1891 Naylor, W. W., Lambertville, New Jersey. (N. R.)
1879 Neff, J. S., 1425 Spruce Street.
1885 Neilson, T. R., 223 South Seventeenth Street.
1880 Newcomer, H. W., died June 1, 1885.
1872 Newsham, Stanley P., resigned December 23, 1881.
1868 Norris, Herbert, resigned January 8, 1880.
1868 Norris, Isaac, resigned November 12, 1874.
1869 Norris, J. C., resigned February 10, 1876.
1861 Norris, William F., Clinical Professor of Ophthalmology in the University of Pennsylvania, 1530 Locust Street.

1875 O'Hara, Michael, 31 South Sixteenth Street.
1891 O'Hara, Michael, Jr., 31 South Sixteenth Street.
1886 Oliver, C. A., resigned November 20, 1887.
1874 Osgood, Hamilton. (N. R.)
1885 Osler, William, Baltimore, Maryland. (N. R.)

1885 Packard, F. A., 131 South Fifteenth Street.
1857 Packard, John H., 1926 Spruce Street. (O. M.)
1868 Pancoast, William H., forfeited membership by non-payment of dues, January 26, 1888.
1891 Pardee, Howard, 3410 Baring Street.
1873 Parish, William H., resigned December 8, 1887.
1875 Parks, Edward L. (N. R.)
1867 Parry, John S., died 1876.
1870 Paul, Comegys, Belvidere, New Jersey. (N. R.)
1875 Paul, James, resigned January 22, 1880.

ELECTED

1890 Pennock, W. J., 1407 North Seventeenth Street.
1891 Penrose, Charles B., 1331 Spruce Street.
1857 Penrose, R. A. F., forfeited membership by non-payment of dues, September 14, 1864. (O. M.)
1865 Pepper, George, died September 14, 1872.
1865 Pepper, William, Professor of Theory and Practice of Medicine in the University of Pennsylvania, 1811 Spruce Street.
1879 Perkins, F. M., resigned December 28, 1888.
1889 Pfouts, Gilbert B., Salt Lake City, Utah. (N. R.)
1885 Piersol, G. A., Chester Avenue and Forty-eighth Street.
1891 Pomeroy, H. F., 1204 Walnut Street.
1870 Porter, William G., resigned December 28, 1888.
1890 Potts, C. S., 1712 Wallace Street.
1886 Powell, William M., Atlantic City, New Jersey.
1890 Prendergast, M. T., 2332 Montgomery Avenue.
1889 Price, Joseph, 500 North Twentieth Street.
1891 Price, William Henry, 128 North Twelfth Street.

1885 Rahter, C. A., Harrisburg, Pennsylvania. (N. R.)
1885 Randall, B. A., Clinical Professor of Diseases of the Ear, University of Pennsylvania, 1806 Chestnut Street.
1889 Rath, O. E., 212 Green Lane, Germantown.
1878 Raub, J. A., forfeited membership by non-payment of dues.
1885 Reed, Boardman, Atlantic City, New Jersey.
1884 Reed, C. H., resigned December 22, 1887.
1874 Reed, H. B., resigned December 9, 1880.
1859 Reed, Thomas B., died 1891.
1871 Rex, George A., 2118 Pine Street.
1869 Rex, O. P., forfeited membership by non-payment of dues, December 10, 1874.
1877 Reynolds, A. S., forfeited membership by non-payment of dues, February 9, 1882.
1864 Rhoads, Edward, died January 16, 1871.
1878 Rich, T. C., resigned January 13, 1881.
1869 Richardson, Elliott, resigned December 8, 1881.
1863 Richardson, Joseph G., died November 13, 1886.
1857 Richardson, T. G., New Orleans, Louisiana. (O. M., N. R.)
1884 Ridge, J. M., Camden, New Jersey.
1886 Riera, J. H., 1630 Vine Street.
1891 Ring, G. O., 1710 North Thirteenth Street.

ELECTED

1876 Risley, S. D., 1722 Walnut Street.
1868 Ritz, Charles N. (N. R.)
1886 Rively, M. P., 839 North Twenty-fourth Street.
1880 Roberts, A. S., 1901 Walnut Street.
1876 Roberts, J. B., Professor of General and Operative Surgery in the Philadelphia Polyclinic and School for Graduates, 1627 Walnut Street.
1889 Robinson, William Duffield, 2012 Mt. Vernon Street.
1876 Roland, O. (N. R.)
1874 Ronaldson, W. D. (N. R.)
1891 Rosenau, M. J., United States Marine-Hospital Service. (N. R.)
1891 Rosenthal, E., 517 Pine Street.
1877 Rudolph, B. J., forfeited membership by non-payment of dues, February 22, 1882.

1867 Santee, Eugene J., 532 North Sixth Street.
1890 Sartain, Paul J., 212 West Logan Square.
1863 Savery, William, resigned February 11, 1869.
1869 Schell, H. S., resigned December 8, 1881.
1890 Schoales, C. B., 1428 North Eleventh Street.
1890 Scott, J. A., 3508 Chestnut Street.
1874 Seiler, Carl, 1204 Walnut Street.
1870 Seyfert, T. H., resigned December 27, 1887.
1870 Shaffner, Charles, 251 South Thirteenth Street.
1876 Shakespeare, E. O., 1336 Spruce Street.
1869 Shapleigh, Elisha B., 658 North Eighth Street.
1868 Sherwood, T. H., forfeited membership by non-payment of dues, December 10, 1874.
1885 Shober, J. B., Fifteenth and Spruce Streets.
1889 Shoemaker, Harvey, 109 South Twentieth Street.
1878 Shoemaker, J. V., resigned May 21, 1888.
1871 Simes, J. H. C., Professor of Genito-urinary Diseases in the Philadelphia Polyclinic and School for Graduates, 2033 Chestnut Street.
1883 Simon, J. W. (N. R.)
1868 Sinkler, Wharton, 1606 Walnut Street.
1881 Skillern, P. G., 429 South Broad Street.
1881 Skillern, S. R., 3509 Baring Street.
1890 Sleifer, North Wales, Pennsylvania.
1890 Smith, A. Donaldson, 222 South Twenty-first Street.

ELECTED

1858 Smith, A. H., died December, 1885.
1888 Smith, Allen J., 332 South Seventeenth Street.
1863 Smith, E. A. (N. R.)
1859 Smith, F. G., resigned November 13, 1873.
1876 Smith, R. M., resigned December 9, 1880.
1875 Smith, Stanley. (N. R.)
1876 Smythe, F. G., died 1879.
1871 Sparks, G. W., forfeited membership by non-payment of dues, December 10, 1874.
1866 Spooner, E. A., forfeited membership by non-payment of dues, December 10, 1874.
1890 Stahl, B. F., 1502 Arch Street.
1871 Starr, Louis, resigned October 14, 1880.
1889 Stavely, A. L., Episcopal Hospital.
1889 Stengel, A., 332 South Seventeenth Street.
1889 Sterling, John, 709 South Ninth Street.
1889 Stevens, Arthur A., 318 South Fifteenth Street.
1886 Stewart, David D., 2628 North Fifth Street.
1883 Stiles, G. A., Conshohocken, Pennsylvania.
1857 Stillé, Alfred, Professor Emeritus of the Theory and Practice of Medicine in the University of Pennsylvania, 3900 Spruce Street. (O. M.)
1889 Strause, F. M., 2602 North Twelfth Street.
1870 Strawbridge, George, resigned June 10, 1875.
1884 Stritmatter, I. P., 999 North Sixth Street.
1889 Strobel, John, 1134 North Third Street.
1869 Stryker, Samuel S., 3821 Walnut Street.
1889 Sudduth, W. X., 1215 Filbert Street.

1891 Taylor, H. B., 1324 North Fifteenth Street.
1879 Taylor, J. M., 1504 Pine Street.
1886 Taylor, L. H., Wilkesbarre, Pennsylvania. (N. R.)
1866 Thomas, C. H., resigned February 11, 1886.
1868 Thomson, William, 1426 Walnut Street.
1891 Thompson, B. 845 North Broad Street.
1870 Tinkham, J. H., United States Navy. (N. R.)
1866 Townsend, George D. (N. R.)
1868 Townsend, R. M., died.
1886 Tull, M. G., resigned December 6, 1886.
1864 Turner, A. P. (N. R.)

ELECTED

1890 Turner, John B., 724 South Sixteenth Street.
1863 Tutt, Charles Pendleton, died May 11, 1866.
1863 Tyson, James, Professor of Clinical Medicine in the University of Pennsylvania, 1506 Spruce Street.
1890 Tyson, T. Mellor, 225 South Seventeenth Street.

1885 Ulrich, W. B., Chester, Pennsylvania, forfeited membership by non-payment of dues.

1871 Valdivieso, R. (N. R.)
1891 Van Buskirk, F. W., Pottstown, Pennsylvania. (N. R.)
1870 Van Harlingen, Arthur, resigned December 8, 1881.
1887 Vansant, Eugene L., 1632 Chestnut Street.
1879 Van Valzah, W. W., resigned.

1887 Walker, J. B., 1617 Green Street.
1891 Wallace, James, 123 North Sixteenth Street.
1890 Walsh, J. F., 1955 Locust Street.
1890 Walter, Charles, died 1891.
1890 Warder, Charles B., 1401 North Sixteenth Street.
1874 Warder, W. H., 1212 North Broad Street.
1867 Watson, E. W., forfeited membership by non-payment of dues.
1866 Weightman, J. F., resigned April 27, 1871.
1876 Weir, A. H., resigned April 14, 1881.
1889 Wells, George M., Wayne, Pennsylvania. (N. R.)
1875 West, Franklin, died.
1887 Westcott, T. S., 28 South Seventeenth Street.
1882 Wetherill, H. M., resigned October, 1885.
1885 Wetherill, R. B., Lafayette, Indiana. (N. R.)
1885 Wharton, H. R., 112 South Eighteenth Street.
1875 Whelen, Alfred, resigned December 23, 1880.
1873 White, J. William, Professor of Clinical Surgery in the University of Pennsylvania, 1810 South Rittenhouse Square.
1868 Willard, De Forest, 1818 Chestnut Street.
1866 Williams, Horace, resigned December 11, 1879.
1890 Williams, M. H., 868 North Eighth Street.
1875 Williamson, Jesse, resigned October 13, 1881.
1889 Wilmarth, A. W., Elwyn, Pennsylvania. (N. R.)
1882 Wilson, C. M., 121 South Seventeenth Street.
1867 Wilson, Elwood, resigned.

ELECTED

1880 Wilson, H. A., resigned December 30, 1882.
1869 Wilson, James C., 1437 Walnut Street.
1867 Wilson, James F., 1010 Race Street.
1869 Wilson, J. H. (N. R.)
1891 Wilson, Samuel M., 1010 Race Street.
1891 Wilson, W. R. 1633 Locust Street.
1873 Winslow, W. H., resigned December 28, 1876.
1889 Wirgman, Charles, 2005 Pine Street.
1864 Wistar, Thomas, resigned February 13, 1867.
1875 Wolford, W. S., forfeited membership by non-payment of dues.
1890 Wolff, L., 333 South Twelfth Street.
1890 Wood, A. C., 1205 Spruce Street.
1863 Wood, H. C., Jr., forfeited membership by non-payment of dues, March 23, 1876.
1883 Woodbury, F., resigned November, 1889.
1865 Woods, D. Flavel, 1501 Spruce Street.
1853 Woodward, J. J., U. S. A., died 1884. (O. M.)
1872 Worthington, D. J., forfeited membership by non-payment of dues, February 9, 1882.

1886 Young, J. K., 220 South Sixteenth Street.

1876 Ziegler, G. W. (N. R.)
1889 Ziegler, Walter, 1418 North Seventeenth Street.

## CORRESPONDING MEMBERS.

ELECTED

1866 Bumstead, Freeman J. Died 1879.

1859 Clark, Alonzo, Professor of Theory and Practice of Medicine in the College of Physicians and Surgeons, New York.

1859 Dalton, J. C., Professor of Physiology in the College of Physicians and Surgeons, New York. Dead.

1885 Dent, Clinton T., Assistant Surgeon and Lecturer on Practical Surgery at St. George's Hospital, Surgeon to Belgrave Hospital for Children, London, England.

1860 Ellis, Calvin. Died 1883.

1888 Fedeli, Gregorio, Rome, Italy.

1858 Flint, Austin, Sr. Died 1886.

1890 Gibbes, Heneage, Professor of Pathology in University of Michigan, Ann Arbor, Michigan.

1858 Hammond, William A., Member of the National Academy of Sciences, New York.

1860 Isaacs, Charles E., Brooklyn. Died June 16, 1860.

1878 Jackson, J. B. S., Boston. Died 1879.

1886 Pye-Smith, P. H., Physician and Lecturer on Medicine at Guy's Hospital, London, England.

1860 Reeves, James E., Wheeling, West Virginia.

1861 Rokitansky, Carl. Died 1878.

1860 Watson, John, New York. Died June 3, 1869.

1859 Worthington, Wilmer, West Chester, Pennsylvania. Died 1873.

# LIST OF SPECIMENS.

## I. ADDRESSES OF PRESIDENTS.


PAGE

1. Annual Address of the President to the Philadelphia Pathological Society. By Dr. F. P. Henry . . . . . 1
2. Annual Address of the President to the Philadelphia Pathological Society. By Dr. H. F. Formad . . . . . 3


## II. THE OSSEOUS SYSTEM.


1. Floating cartilage removed from the knee-joint. By Dr. G. G. Davis 7
2. Gelatinous arthritis. By Dr. T. S. Westcott . . . . . 8
3. Necrosis of the petrous portion of the temporal bone. By Dr. H. F. Formad . . . . . 9
4. A series of fractures of the skull. By Dr. H. F. Formad . . 10
5. Gunshot injury of the head. By Dr. H. F. Formad . . . 13
6. Fracture of skull, without the usual immediate symptoms. By Dr. H. F. Formad . . . . . 14
7. Tubercular arthritis. By Dr. J. H. Lloyd and Dr. De F. Willard 15


## III. THE DIGESTIVE SYSTEM.


1. Cancer of the stomach. By Dr. J. Kahn . . . . . 17
2. Cancer of the stomach. By Dr. J. Kahn . . . . . 18
3. Sarcoma of Liver. By Dr. J. L. Rothrock . . . . . 19
4. Cancer of stomach. By Dr. A. A. Eshner . . . . . 20
5. Chronic dysentery. By Dr. J. H. Musser . . . . . 22
6. Gastric ulcer opening into cavity in spleen. By Dr. J. L. Rothrock 23
7. Cancer of head of pancreas. By Dr. A. Stengel . . . . 24
8. Sarcoma of omentum and liver. By Dr. A. Stengel . . . 25
9. Gall-stone, occlusion of the cystic duct, false passage from the gall-bladder into the duodenum, and multiple hepatic abscess. By Dr. A. V. Meigs . . . . . 28

PAGE

10. Specimens from a case of hepatic obstruction. By Dr. F. A. Packard . . . . . 30
11. Cancer of rectum; colotomy. By Dr. J. B. Deaver . . . 31
12. The intestinal lesions of starvation. By Dr. H. F. Formad and Dr. Birney . . . . . 37
13. Specimens from a case of typhoid fever. By Dr. J. Daland . . 41
14. Specimen from a case of intestinal obstruction. By Dr. M. J. Rosenau . . . . . 42
15. A case of Choctaw or jungle fever. By Dr. J. F. Berlet . . . 43
16. Strangulated femoral hernia. By Dr. W. M. L. Coplin . . . 47
17. Miliary tuberculosis of peritoneum and lung with purulent discharge for eight months. By Dr. J. Daland . . . . . 47
18. Biliary calculi. By Dr. W. Izard . . . . . 50
19. Cancer of liver and peritoneum. By Dr. J. Kahn . . . . 51
20. Four stomachs from cases of poisoning. By Dr. J. L. Hatch . 51
21. Appendicitis with perforation. By Dr. W. M. L. Coplin . . 52
22. Hypertrophy of the wall of the stomach. By Dr. H. F. Formad . 52
23. Intussusception from a child. By Dr. W. E. Hughes . . . 53
24. Perforating ulcer of stomach extending into lungs; abscess of liver. By Dr. W. E. Hughes . . . . . 54
25. Primary carcinoma of the stomach, with secondary deposits in the pancreas and liver. By Dr. B. Brooke . . . . . 55
26. Symmetrical perforating ulcers of the stomach. By Dr. W. Brooks 56
27. Tubercular enteritis. By Dr. A. J. Smith . . . . . 59
28. Specimen from a case of dysentery. By Dr. A. J. Smith. . . 60
29. Rupture of the stomach and fracture of the skull. By Dr. H. F. Formad 60
30. Duodenum from a case of burn. By Dr. H. F. Formad. . . 61
31. Dysenteric ulceration of the colon with perforation. By Dr. J. Daland . . . . . 62
32. The morbid anatomy of typhoid fever. By Dr A. V. Meigs . . 64
33. Case of acute opium poisoning; dilated stomach; biliary calculi. By Dr. J. Leidy, Jr. . . . . 77
34. Perforated appendix. By Dr. A. J. Downes . . . . . 78
35. Meningitis and carcinoma of stomach. By Dr. M. H. Fussell . 79
36. Cancer of œsophagus; gastrostomy. By Dr. J. B. Deaver . . 80
37. Case of abscess of liver. By Dr. H. M. Fisher . . . . 82
38. Cancer of liver and pancreas, cholesteatoma, and uterine fibroids. By Dr. J. L. Hatch . . . . . 84
39. Umbilical hernia. By Dr. H. F. Formad . . . . . 85
40. Hepatic abscess. By Dr. L. Wolff . . . . . 86
41. Plastic peritonitis. By Dr. L. Wolff . . . . . 87
42. Ulcerative cholecystitis, with perforation into the colon. By Dr. J. Tyson and Dr. A. J. Smith . . . . . 90
43. Diverticulum of ileum. By Dr. J. Tyson and Dr. A. J. Smith . 93
44. Cancer of stomach. By Dr. S. Taylor . . . . . 93

PAGE
45. Microscopic specimens of hairy tongue. By Dr. C. W. Burr . . 95
46. Large gall-stone. By Dr. A. J. Downes . . . . . 95
47. Tuberculous peritonitis. By Dr. A. A. Eshner . . . . 96
48. Abscess of liver. By Dr. D. J. M. Miller . . . . . 97
49. Corrosive sublimate poisoning. By Dr. H. F. Formad . . . 98
50. Amœba coli. By Dr. A Stengel . . . . . 99
51. Ulcer of stomach. By Dr. D. J. M. Miller . . . . . 102
52. Tubercular enteritis. By Dr. S. Solis-Cohen . . . . . 105
53. Foreign body lodged in the œsophagus; ulceration into the trachea. By Dr. H. Taylor . . . . . 109
54. Gastric cancer. By Dr. F. A. Packard . . . . . 110

## IV. CIRCULATORY AND BLOOD-MAKING SYSTEM.

1. Aneurism of first portion of the arch of the aorta, communicating with the pulmonary artery (spontaneous varicose aneurism of Thurnam. By Dr. F. P. Henry . . . . . 111
2. Spleen after splenotomy. By Dr. A. J. Downes . . . . 114
3. Hemorrhagic pericarditis with perinephritic abscess. By Dr. J. L. Rothrock . . . . . 115
4. Acute endocarditis in phthisis. By Dr. J. H. Musser . . . 116
5. Case of chronic valvular disease with multiple emboli. By Dr. J. Leidy, Jr. . . . . 117
6. Aneurism of the descending portion of the thoracic aorta. By Dr. A. V. Meigs . . . . . 120
7. A case of thoracic aneurism. By Dr. J. F. Berlet . . . . 125
8. Mitral and aortic disease, with splenic infarction. By Dr. H. M. Fisher . . . . . 126
9. Cardiac hypertrophy; cardiac valvular disease; pulmonary infarctions. By Dr. J. Leidy, Jr. . . . . 128
10. Pericardial hemorrhage from a dissecting aneurism. By Dr. H. F. Formad . . . . . 129
11. Pericarditis in the elephant. By Dr. Laplace . . . . . 129
12. A case of pyo-pericardium in which drainage produced an imperfect cure. By Dr. C. Walter . . . . . 130
13. Aortic stenosis and cardiac hypertrophy. By Dr. J. Daland . . 131
14. Enlarged heart in a case of aortic regurgitation with stenosis. By Dr. S. Solis-Cohen . . . . . 133
15. Aneurism of the heart. By Dr. H. F. Formad . . . . . 133
16. Pseudo-leukæmia. By Dr. J. Daland . . . . . 134
17. Aneurism of heart. By Dr. W. M. L. Coplin . . . . . 140

PAGE
18. Two specimens of chronic endocarditis. By Dr. H. F. Formad . 140
19. Dissecting aneurism. By Dr. H. F. Formad . . . . . 141
20. Aneurism of arch of aorta; ulceration of trachea. By Dr. A. F. Müller . . . . . 141
21. Anomaly of heart. By Dr. H. F. Formad . . . . . 142
22. Specimen of mitral stenosis. By Dr. F. P. Henry . . . . 143
23. Filaria from a dog's heart. By Dr. J. H. Musser . . . . 146
24. Acute endocarditis. By Dr. J. H. Musser . . . . . 146
25. Sacculated aneurism of aortic arch. By Dr. F. P. Henry . . 147
26. Specimen of dilated aorta. By Dr. F. P. Henry . . . . 148
27. Aneurism of the aorta. By Dr. H. F. Formad . . . . 149
28. Dilatation of the aorta By Dr. F. A. Packard . . . . 150
29. Aneurism of the heart. By Dr. H. F. Formad . . . . 152
30. Some consequences of advanced general atheroma; a rare kidney anomaly. By Dr. A. Stengel . . . . . 154
31. Acute endocarditis, with splenic infarction. By Dr. D. J. M. Miller 158
32. Thrombosis of femoral artery from a case of gangrene of the leg. By Dr. D. J. M. Miller . . . . . 160
33. Anomalous extra cusp to the pulmonary valve. By Dr. H. W. Cattell . . . . . 161
34. Aneurism of the aorta. By Dr. Tuteur . . . . . 162

## V. RESPIRATORY SYSTEM.

1. Plastic pleurisy. By Dr. M. H. Fussell . . . . . 164
2. Large pulmonary cavity simulating pneumothorax. By Dr. S. Solis-Cohen . . . . . 164
3. Case of pneumonia and pericarditis with remarkable simulation of the signs of pneumothorax. By Dr. H. M. Fisher . . . 165
4. Specimens from a case of empyema. By Dr. W. E. Hughes . . 166
5. Partial perforation of the chest wall in phthisis. By Dr. W. E. Hughes . . . . . 166
6. Specimen of phthisical cavity communicating with pleural space: early course of case simulating typhoid fever. By Dr. B. Brooke . . . . . 167
7. Specimens from a case of suffocation. By Dr. H. F. Formad . . 168
8. Tubercular pleurisy with tuberculosis of lungs. By Dr. E. L. Vansant . . . . . 168
9. Plastic pleurisy and pneumonia. By Dr. H. F. Formad . . 169
10. Exophthalmic goitre and phthisis. By Dr. S. Solis-Cohen . . 170

## VI. GENITO-URINARY SYSTEM.

### *a.* KIDNEYS, BLADDER, ETC.

PAGE

1. Sacculated bladder. By Dr. M. J. Rosenau . . . . . 172
2. Large white kidneys. By Dr. H. W. Cattell . . . . . 172
3. Specimens illustrating procidentia uteri, with hydronephrosis and calculi in the bladder and ureter, and anomalous opening of the right coronary artery. By Dr. A. V. Meigs . . . . 173
4. Calculous disease of the kidneys with stone in the ureter. By Dr. J. Daland . . . . . 175
5. Specimen from a uræmic case, with symptoms simulating intestinal obstruction. By Dr. E. Laplace . . . . . 176
6. Vesical calculus. By Dr. G. A. Bodamer. . . . . 179
7. A case of nephro-lithiasis. By Dr. L. Wolff . . . . . 179
8. A single kidney from an old person. By Dr. G. A. Bodamer . . 181
9. Specimens of renal lesions in animals. By Dr. A. J. Smith . . 183
10. Amyloid kidney. By Dr. H. F. Formad . . . . . 184
11. A case of cystic degeneration of kidneys in fœtus preventing delivery. By Dr. M. H. Fussell . . . . . 184
12. Renal anomalies. By Dr. H. F. Formad . . . . . 189
13. Specimens from a case of uræmia. By Dr. F. A. Packard . . 190
14. Sarcoma of kidney. By Dr. Ball . . . . . 191
15. Rupture of the bladder. By Dr. F. Gummey . . . . . 192
16. Contracted kidneys. By Dr. E. L. Vansant . . . . . 192
17. Pyonephrosis. By Dr. J. H. Lloyd . . . . . 193
18. Sarcoma of the kidney. By Dr. H. F. Formad . . . . 194
19. Lesions of gout. By Dr. A. A. Eshner . . . . . 199
20. Kidney tuberculosis. By Dr. A. Stengel . . . . . 200

### *b.* FEMALE GENITAL ORGANS.

21. Ovarian cysts. By Dr. J. Leidy, Jr. . . . . 205
22. A large ovarian cyst with fistulous communication into, and partial escape of contents through the bowels; death; autopsy. By Dr. H. F. Formad. . . . . 206
23. Pedunculated fibroma of the labium majus. By Dr. J. K. Young . 209
24. Extra-uterine pregnancy. By Dr. H. F. Formad . . . . 209
25. Specimens from a case of puerperal septicæmia simulating typhoid fever. By Dr. Clara Marshall . . . . . 210
26. Intra-uterine fibroid polyp. By Dr. W. M. L. Coplin . . . 215
27. Large ovarian tumor of rare form simulating pregnancy. By Dr. E. P. Davis . . . . . 215
28. Fibroid of the uterus; ovarian cyst; hydro-salpinx. By Dr. J. Price . . . . . 218

PAGE

29. Epithelioma of uterus. By Dr. J. K. Mitchell . . . . 219
30. Subperitoneal fibroid tumors of uterus. By Dr. J. Price . . 220
31. Ectopic pregnancies. By Dr. J. Price . . . . . 221
32. Pyo-salpinx; hæmato-salpinx. By Dr. J. Price . . . . 222
33. Malformation of uterus and vagina. By Dr. J. L. Hatch . . 223
34. Various gynecological specimens. By Dr. J. Price . . . . 224
35. Five cases of extra-uterine pregnancy. By Dr. C. P. Noble . . 225
36. Enormous fibroid tumor of uterus. By Dr. J. M. Baldy . . 228
37. A case of tubal pregnancy. By Dr. M. H. Fussell . . . . 229
38. Bilateral ovarian new-growths. By Dr. G. Metzler . . . . 232
39. Dermoid cyst of ovary. By Dr. A. Stengel . . . . . 233
40. Free fibroid tumor in abdominal cavity. By Dr. J. M. Baldy . 234

*c.* MALE GENITAL ORGANS.

41. Sarcoma of the testicle. By Dr. J. B. Deaver . . . . . 235
42. Epithelioma of glans penis. By Dr. M. V. Ball . . . . 236

*d.* MAMMARY GLANDS.

43. Cancer of breast. By Dr. W. M. L. Coplin . . . . . 237
44. Tumors of the breast. By Dr. W. M. L. Coplin . . . . 237
45. Tumor of the breast. By Dr. W. M. L. Coplin . . . . 238
46. Cancer of the breast. By Dr. M. V. Ball . . . . . 239

## VII. THE NERVOUS SYSTEM.

1. Trismus nascentium. By Dr. M. H. Fussell . . . . . 241
2. Hemorrhage into the cerebellum and fourth ventricle, and by extension into the third and lateral ventricles. By Dr. C. K. Mills . 242
3. A case of Addison's disease with solitary kidney. By Dr. L. Wolff 243
4. A series of cerebral hemorrhages. By Dr. J. L. Hatch . . . 244
5. Lesions of fright. By Dr. H. F. Formad . . . . . 248
6. Case of gumma of the temporo-sphenoidal and frontal lobes. By Dr. H. M. Fisher . . . . . 250
7. Specimens of Chinese brain. By Dr. J. L. Hatch . . . . 252
8. Extra-dural hemorrhage. By Dr. J. B. Deaver . . . . 262
9. Two neuromata from stumps. By Dr. W. M. L. Coplin . . . 266
10. Specimen of porencephalus. By Dr. B. Brooke . . . . 268
11. Multiple thrombi of circle of Willis. By Dr. J. Leidy, Jr. . . 268
12. Account of a case of tumor of the cerebellum, complicated by dropsy of the ventricles; exploratory operation; tapping of ventricles; death on the fifth day. By Dr. F. X. Dercum and Dr. W. J. Hearn . . . . . 269

PAGE

13. Abscess of brain after fracture of skull. By Dr. A. J. Smith . . 281
14. Case of porencephalus in a child, aged six years. By Dr. J. H. Lloyd . . . . . 281
15. Abscess of the brain. By Dr. H. F. Formad . . . . . 284
16. Brains of idiots. By Dr. A. W. Wilmarth . . . . . 285
17. Addison's disease. By Dr. J. Tyson . . . . . 287

## VIII. TUMORS NOT OTHERWISE CLASSIFIED.

1. Peritoneal sarcoma. By Dr. H. W. Cattell . . . . . 290
2. The organogenic energy of tumors occurring in organs. By Dr. A. J. Smith. . . . . 292
3. Alveolar sarcoma of skin. By Dr. W. M. L. Coplin . . . 297
4. Peritoneal sarcoma following injury. By Dr. H. F. Formad . . 298
5. Epithelioma of the head of a mouse. By Dr. H. F. Formad . . 299
6. Calcareous glandular tumor in an unusual situation. By Dr. F. P. Henry . . . . . 300
7. Case of sarcoma of the mediastinum involving the left lung. By Dr. H. M. Fisher . . . . . 301
8. Congenital multiple tumors in a fœtus at eight months. By Dr. W. R. Wilson . . . . . 302
9. Case of multiple sarcoma. By Dr. H. M. Fisher . . . . 304
10. The pathology of carcinoma. By Dr. H. Gibbes . . . . 306
11. Myxomatous tumor of the abdominal wall. By Dr. F. Hinkle . 322
12. Fibro-lipoma of the nuchal region. By Dr. F. Hinkle . . . 323

## IX. MISCELLANEOUS.

1. Tubular epithelioma. By Dr. H. F. Formad . . . . . 324
2. Congenitally atrophic eye; calcification of vitreous portion. By Dr. A. J. Smith . . . . . 327
3. Abscess of abdominal wall. By Dr. W. M. L. Coplin . . . 327
4. Ulceration of stomach of python. By Dr. J. L. Hatch . . . 328
5. Miliary tuberculosis and malaria. By Dr. J. Leidy, Jr. . . . 332
6. Cleft palate in a lion's whelp. By Dr. W. E. Hughes . . . 334
7. Gunshot injury of head. By Dr. F. Hinkle . . . . . 334
8. Case of general tuberculosis. By Dr. H. M. Fisher . . . 337
9. Ulcers of stomach in pythons. By Dr. J. L. Hatch . . . 337
10. Probable tuberculosis of the supra-renal bodies. By Dr. C. Walters 338
11. Case of hydatid cyst. By Dr. J. L. Hatch . . . . . 339
12. Instance of hysterical deception. By Dr. J. Daland . . . 340

PAGE
13. Acephalic monstrosity. By Dr. E. Laplace . . . . . 342
14. Parasites in a python. By Dr. J. L. Hatch . . . . . 342
15. Anthrax. By Dr. F. Gummey . . . . . 343
16. A case of chronic pancreatitis with disseminated fat-necrosis; death by subacute hemorrhagic pancreatitis, simulating a case of poisoning. By Dr. H. F. Formad . . . . . 345
17. Post-mortem report upon thirty-five cases of extra-uterine pregnancy, with remarks upon the frequency of death from primary rupture of the sac. By Dr. H. F. Formad . . . . . 349

## X. TECHNIQUE.

1. Simple methods of photographing with the microscope. By Dr. B. A. Randall . . . . . 354
2. The rapid and easy removal of the spinal cord. By Dr. A. H. P. Leuf . . . . . 361
3. A new staining method for nervous matter. By Dr. A. J. Smith . 363

XI. CARD SPECIMENS . . . . 365

# REPORT.

## I. ADDRESSES OF PRESIDENTS.

### 1. *Annual Address of the President to the Philadelphia Pathological Society.*

Delivered by Dr. F. P. Henry.

The address of the retiring President, which is now in order, might be fitly termed a farewell address; for, as a rule, it is no sooner delivered than its author disappears from amongst us forever. Of the fifteen presidents who have sat in this chair before me, five are dead; and yet, with but one exception, they all might as well be defunct so far as active participation in this Society is concerned. There appears to be a law regulating this matter, and if this is the case it will be useless for me to contend against it. We cannot tell what efforts my predecessors have made to be regular in their attendance at those meetings over which they have ceased to preside; we only remember their promises to be so. For my part, bearing in mind these broken vows, I shall make none whatever. It seems to me, however, that I shall enjoy at least an occasional attendance at meetings for the success of which I am no longer responsible.

I am sure you will pardon me if I depart somewhat from the prescribed subjects of this address and indulge in some personal reminiscences. I became a member of this Society in 1870, Dr. John Ashhurst, Jr., being president. I had come to this city from New York one year before the time I speak of, and when I took my seat at the first meeting after my election, I scarcely knew a member of this Society. Since that time I have occupied every office except those of secretary and recorder, and served on every committee. It is scarcely necessary for me to say to you who know me so well that I mention these facts in no spirit of self-laudation, but solely in grateful recognition of your kindness. I am glad of this public opportunity of thanking the pro-

fession of this city for the many kindnesses they have shown me. I seldom refer to the fact, almost forgotten by myself, that I am not a Philadelphian. Not long ago I read a story about that wonderful centenarian, Chevreul, to the effect that when a friend was remarking upon his great age, he said: "Hush! say nothing about it; they have forgotten me;" and so I, when the fact of my not being a Philadelphian is mentioned, feel like changing the subject.

It is time to do so now, and it is with great pleasure that I call your attention to the following condition of our affairs. During the past year our meetings have been well attended, and the number of specimens has been at least up to the average. Our membership also has been decidedly increased. The principal event of the year was an address by Prof. Roswell Park, of Buffalo, on infectious processes in bone, which was replete with the results of original observation. Numerous other contributions of great merit have been made to our Proceedings, and there can be no doubt that the standard of our *Transactions* will be fully maintained in the forthcoming volume.

There is a point to which I feel it my duty to call attention. At one time in the history of this Society there was a tendency to cultivate the study of histology to the exclusion of everything else. Frequently the only part of a specimen presented here was to be found under the microscope, the tumor of which it was a sample being considered so unimportant in comparison with its minute structure that it was thought unnecessary to exhibit it. It seems to me that there is now a tendency to go to the opposite extreme. For example, at a very recent meeting several specimens of carcinoma were presented, in none of which had there been a microscopical examination. The tendency referred to is not confined to this Society, and is doubtless one result of the present intense interest in bacteriology.

In the debate on chronic alcoholism which was held last year at the Pathological Society of London, Dr. Savage aptly characterized morbid specimens as "mere rags and tatters of humanity," and expressed the opinion that there was a pathology beyond them. There is; and it consists partly in endeavoring to ascertain the ultimate causes of the morbid processes we meet here to study. A thorough knowledge of pathological processes is the only sure foundation of preventive medicine, and if this fact be kept in mind we shall never be at a loss for a retort to the sneer that pathologists are engaged in the study of post-mortem diagnosis.

*October* 10, 1889.

## 2. *Annual Address of the President to the Philadelphia Pathological Society.*

Delivered by Dr. H. F. Formad.

Gentlemen: In accordance with one of the oldest By-laws, which says "It shall be the duty of the President at the annual meeting for elections in October to make an address to the Society, in which he shall describe and sum up the work of the Society for the past year, and make such suggestions in regard to its labors and the mode of conducting them as may seem to him desirable," I am obliged to give you an account of the work of the Society for the past year. In the first place, I want to thank the members for the uniform kindness and courtesy which they have extended to me during the term which I have had the honor to serve as President. I thank you also for the kind indulgence in my shortcomings as presiding officer, for I know that I have been a poor one as regards parliamentary usages.

This is the thirty-fourth anniversary of the Philadelphia Pathological Society, which, as you know, was organized in 1857. Incidentally, looking over the history of the Society, I find that it was organized by Jefferson men with Dr. Samuel D. Gross as president, and Dr. J. M. Da Costa as secretary. The Society was organized in Dr. Da Costa's house. The first specimen was exhibited by Dr. S. Weir Mitchell—a fatty liver—at the first meeting which was held in the Pennsylvania Hospital. I would much like if our colleagues and friends of the Jefferson College would not forget us and would participate in the deliberations and work of the Pathological Society.

The year past has been quite a successful one and most gratifying to me and to all who have taken an active part in the work of the Society. Our membership has increased by ninety, although some of them have not been introduced to the Society. Our present membership is 275. It is also remarkable that the membership of the Society has fluctuated very little. Twenty-five years ago there were 150 members, and it remained at this, some years being greater some years less, until five years ago when it increased to 170.

The number of meetings during the past year was sixteen. No meeting was adjourned except one, and this was because there was a great reception and everybody was anxious to attend. It was adjourned not on account of want of a quorum but because of the wish of the members. The average attendance was twenty-three to twenty-four.

This is also an increase in the attendance over twenty years ago. It was eighteen two years ago, fifteen four years ago, and in former years the average was not greater than twelve; we have not, therefore, made any step backward.

The number of specimens exhibited was 161, which was about ten for each meeting. Seven papers were read without the exhibition of specimens. This includes the address of Dr. Guitéras a year ago, at which time there was a very large attendance, which was not incorporated in the average of our attendance. The papers, as in former years, were good and of high standard.

No changes have been made in our By-laws.

The financial standing of the Society is quite satisfactory. The Treasurer has been good enough to give me a report which shows that there is a balance in the treasury of $437.72. This does not include quite a number of dues which will yet be paid. This is rather an unfavorable time to make up the accounts, but it is the rule of the Society to have the annual accounts presented at this time. Of course, we must take into consideration that the volume of *Transactions* for the past three years has not been published. This is very much to be regretted. We certainly have the money to do it. During the coming year we will have over $1000 from dues in addition to the amount now in the hands of the treasurer. This will enable us to publish not only one volume, but several of our *Transactions*. We have this balance in spite of rather larger expenses than usual. We employed a stenographer last year whose bill amounted to $100. Various other extra expenses were met and the amount in the treasury is still a satisfactory one.

As to suggestions, I do not think that we can improve. I think that our Society is in very good running order. We might improve in regard to the arrangement of material. We might improve by adopting an amendment to the By-laws which is proposed by the Secretary, providing for a committee whose duty it shall be to arrange for special meetings for a discussion upon certain subjects. This would be very advisable, to have at least one meeting in the month for miscellaneous specimens, and one meeting for definite specimens and for discussions upon definite subjects; then those who have specimens illustrating that subject will with greater willingness bring them here, knowing that they will be thoroughly discussed.

The matter of card specimens which was commenced a few years ago is a good one, as we cannot always present a paper with the specimen. Specimens are often brought in a fresh state, and while fresh have a

greater value than if allowed to wait until the gentleman has time to prepare a paper on the subject. We learn a great deal by seeing fresh specimens. It is unnecessary to insist on a communication with each specimen. Still I by no means wish to encourage the habit of presenting specimens without a written history, but think no one should be prevented from doing so. I also think it is essential that we should have a stenographer who will take notes (whether we have a history or not) of everything interesting that takes place. This greatly facilitates the work of the recorder, and our proceedings will be in much better shape if there is a man who can take notes of everything, which can be readily analyzed, and matters of importance kept and matters of less importance omitted.

No prize has been offered for the exhibition of specimens, yet I think that if a prize were offered for certain subjects of importance in a certain line, some of the younger members, especially residents in the hospitals, would take the pains to present valuable material. Small prizes of $25 or $50 for certain series of specimens might furnish subjects for very interesting discussions. We have not done so because we have always had enough material. In fact we always had more than could be utilized. During the past year I have withdrawn one-half of the specimens that I wished to show in order not to prolong the meetings unduly. This will be a matter for the business committee, which I hope will prove diligent, perhaps more diligent than heretofore, and also to the publication committee. It would be well for the publication committee to look into our affairs as far as concerns the publication of our *Transactions* in the form of a volume or otherwise. I think that by some means, especially if we have an active Recorder, we may be able to have abstracts of our proceedings published in the journals. The proceedings of other pathological societies are published in the journals, and our work is not inferior to theirs. Looking over the *Proceedings of the London Pathological Society*, I have been much gratified to find that the material here was as good as that presented in that Society—perhaps the discussions were not so exhaustive or participated in by such prominent men. If the prominent men do not want to take part in our work, we have certainly sufficient young life who can present material, and we may have debates and discussions which, if properly arranged, will surpass anything we have yet done.

I attended some of the meetings of the Pathological Society of Paris while abroad. They do not have any more material than we have. I believe that this Society must have been copied after that. We have

the same order of business, the same arrangement in everything, and all the rules and habits of this Society seem to have been copied after that of the Anatomical Society of Paris.

I do not know that I have anything to add, except to congratulate you upon the standing of our Society, both in its scientific and in its financial aspects. *October* 9, 1890.

## II. THE OSSEOUS SYSTEM.

### 1. *Floating cartilage removed from the knee-joint.*

Exhibited by Dr. G. G. Davis.

A man, æt. 38 years, a storekeeper by occupation, was admitted into the Orthopædic Hospital in October, 1889, for a floating body in his left knee-joint.

He gave the following history: Ten years ago, while stepping down from an empty hay-rack, his foot slipped and he gave his knee a sharp wrench. He was laid up for a week, but the trouble all passed away and he remained well until last August. At that time, while running down a steep hill, he stepped on a loose stone or root and gave the knee a very severe strain, which pained him terribly at the time. The following day, while going from his dwelling to the store, using a crutch and just touching his toes to the ground, in stepping from the walk to the ground, a distance of ten inches, he gave the knee another severe wrench; then the foreign body made its appearance on the inside of the knee. As long as the body remained up alongside of the knee-cap it did not cause any pain, but as soon as it dropped into the joint it hurt him severely. The body never appeared on the outer side of the knee-cap until he came to the hospital. In the fall of 1887 he had a severe attack of rheumatism in his left shoulder, and in 1888 he had another attack in the right shoulder.

On his admission, the left knee-joint was found to be much swollen and very painful, and evidently the seat of a traumatic arthritis. The floating cartilage appeared sometimes to the inner and sometimes to the outer side of the patella. On the occasion of its last appearance on the outer side, the resident fixed it in position with a pad and bandage, and I was sent for.

The patient was etherized, and the body removed. The wound healed promptly and the patient returned home.

On examining the piece which was removed, it was found to look like a piece of cartilage; it was about half an inch square, with rounded edges and corners, and was nearly a quarter of an inch thick at one

side. It was readily punctured with a needle, except at its thickest portion, where there seemed to be a deposit of bony or calcareous matter.

Microscopic sections showed that the body was composed of hyaline cartilage, with some bone on its under side.

The history of traumatism being so direct, as well as the structure of the body, both seem to show that it had its origin from the cartilaginous covering of the bones, and that the various wrenches to which the joint had been subjected had torn it off, together with a small piece of the underlying bone. Although the patient had had rheumatism, still this joint had never been affected, and it is not probable that pathological processes had any influence in causing the detachment of the cartilage. It certainly bears no resemblance to those cases of multiple growths occasionally seen affecting this and other joints.

*March* 27, 1890.

---

2. *Gelatinous arthritis.*

Exhibited by Dr. T. S. Westcott.

The specimen, which I show by the kindness of Dr. John Ashhurst, is from a case of gelatinous arthritis of the knee-joint. The patient was a colored man, æt. 54 years, although he looked older. He had been complaining for a year, but had not been confined to bed until within the last six months. When first seen, about three weeks ago, the knee was much swollen, and had begun to be painful. The question of excision was considered, but the age of the patient and his general condition inclined Dr. Ashhurst to propose amputation. The operation was done yesterday.

The principal disease seems to be in the bursa of the patella, which is much enlarged and lined with a membrane which is soft, succulent, and fleshy. This contained a quantity of gelatinous matter. The articular surface of the tibia is just beginning to show evidences of involvement. One of the condyles of the femur is also implicated. The specimen is of interest, because the disease is at a stage in which we do not often have the opportunity of examining it. *May* 22, 1890.

3. *Necrosis of the petrous portion of the temporal bone.*

Exhibited by Dr. H. F. Formad.

A man, æt. 20 years, was hit upon the left side of the head over the ear. Feeling some pain and becoming deaf in that ear, he went to the dispensary at Thirteenth and Chestnut streets and was treated by Dr. Lautenbach. There was a discharge from the ear, and mastoid disease was diagnosed; in fact the question of trephining was considered, but was not done. In the course of some weeks after the injury he died. The man who had struck him was arrested, and I was put in the uncomfortable position of deciding whether or not the blow had anything to do with the death. What was still more unfortunate, I could not find anything to account for the death. There was no meningitis, except a patch immediately in connection with the pia mater covering the piece of bone which I hold in my hand. There was some congestion of the brain. This was a good thing to fall back upon, and I gave the cause of death as congestion of the brain; but I was unable to say whether or not it was caused by the blow. Moreover, I suspected that it might be of tubercular nature. Careful section showed distinct necrosis of the whole middle ear, and also of the bone leading toward the mastoid protuberance. The whole petrous portion of the bone is more or less riddled by necrotic change. I examined for tubercle bacilli, but found none; I had others examine the specimen, with the same result. This was in favor of the possibility that it might be due to the injury. I did not undertake to decide, but the jury determined that death was not due to the blow. I should like to hear from Dr. Randall in regard to this specimen.

Dr. B. Alexander Randall said: I have been quite interested in this specimen of ear disease. The history of the case is rather indefinite, and much of the decision would depend upon the clinical symptoms presented between the time of the injury and the fatal result. A considerable portion of the drum membrane is still present, and the amount of laceration and destruction which is here may be due to the saw and not to the disease. It is quite usual to find, as the result of a blow, rupture of the drum membrane, and if this is maltreated it is liable to go on to suppuration, and the suppuration may be extremely dangerous. It would be interesting in this case to know whether or not there was total deafness, and if all signs of conduction by the bone were absent. I find in the specimen no evidence of affection of the labyrinth. As to whether or

not the mastoid disease depended on the blow, it is impossible to state positively; there is a distinct and probable train leading from the ear, and possibly from the blow on the ear to the mastoid suppuration and the localized meningitis; but how far the blow is responsible it would be impossible to say, for the ear trouble may have antedated the injury.

Dr. Formad then asked Dr. Randall what are the other influences that might have caused necrosis, beside traumatism and tubercular disease.

Dr. Randall answered that it might be due to acute suppurative disease of the middle ear consequent upon coryza or some similar influence.

*June* 26, 1890.

---

### 4. *A series of fractures of the skull.*

Exhibited by Dr. H. F. Formad.

1. Fracture of the Skull by a Poker.—Here is a specimen which I have sawed open under the impression that it was a case of necrosis of the bone, but what I took for necrotic change appears to be simply sawdust.

The specimen has, however, another feature—a fracture of the skull in the anterior part of the temporal region. There is here a large hole, produced by the end of a large poker used in a blacksmith's shop. The man's head was struck with the sharp end of the instrument, and it must have entered the bone considerably, as there was some difficulty in removing it. A certain effort had to be made by the bystanders to remove it. The man lived ten days, and died in the Pennsylvania Hospital. Upon examination the fracture proves to be very interesting. There was no radiation whatever; the fracture did not extend at all, but was simply a localized compound comminuted fracture, corresponding very nearly to the size of the instrument used. Even if there had been no eye-witnesses, there would have been no trouble in attributing this fracture to a blow, and not to a fall.

2. Fracture of the Skull by a Stone.—I have here another fracture of the skull, produced by a stone striking the head. Here, also, there is merely a large hole, a distinct comminuted fracture covering an area of about three square inches, not radiating. It, too, is almost exactly limited to the place where the stone came in contact with the head. This case was treated in St. Mary's Hospital, where the trephining causing the appearance of the specimen was done.

3. Fracture of the Skull by a Brick; Partial Healing.—Here is the indentation in a skull which was produced by a piece of brick, the edge of which struck the head. The man was riding in a wagon; he did not fall. He lived a week or more, and died of meningitis, as was the case in the other two instances. Here is a distinct attempt at healing, even to the formation of callus.

4. Completely Healed Fracture of the Skull.—I have here a specimen of a healed fracture of the skull. The fracture was produced by a stone ten years ago, and the man was treated in the Pennsylvania Hospital and recovered. This specimen was recently obtained.

5. Fracture of the Skull Produced by a Sharp, Heavy Body.—Here is another fracture of the skull, produced by a sharp, heavy body. A clean piece of the bone is knocked out. The fracture did not extend to other parts of the skull.

From these cases and a number of others which I have seen, I have formulated the rule that if there is a localized comminuted fracture of the skull, without extension to the base and without extension laterally, as is sometimes the case, it is always due to a blow, and not to a fall. Of fractures produced by falls I have a number of specimens. Any fracture due to a fall is always a longitudinal one, and usually goes meridianally across the skull and extends downward to the base, or through the sphenoid or into the foramen magnum. In all cases of fracture from falls there has been invariably fracture extending to the base of the skull, and there may sometimes be slight comminution, as in the following case:

6. Fracture of the Skull from a Fall.—This man was hit in the face and fell against the curbstone, damaging his skull. Always, as in this case, where a person in falling strikes against some projection, the fracture, besides being comminuted, will invariably extend longitudinally and go to the base. I have notes of at least three hundred cases, and that is the rule. I find it so commonly, that I am able to decide whether a given fracture is due to a fall or to violence by being struck!

It is quite plausible that we should have this difference in fractures, for when the skull is struck by a heavy body the force is exerted on only one point of the skull, whereas, if a person falls, the whole weight of the body partakes in the force, and, when the head comes in contact with the pavement or the hard soil, the pressure is exerted against a large surface of the head, and fracture ensues and leads to the base because of the radiation of the fibres in that direction. I should like to have an expression from the Society on this point, as it is very desirable to be able to judge the cause of a given fracture.

Dr. George B. Dunmire said: One point made by Dr. Formad has interested me, and I know of one case which bears out his idea in reference to the difference between fracture produced by a blow on the head and one produced by a fall. This was the case of a gentleman who endeavored to stop a horse that was running away; the horse reared, and threw him forcibly on the hard ground. He at once became insensible and was carried home, where he died in four hours. I was present at the post-mortem examination, and, corroborating Dr. Formad's remarks, there was a radiating fracture from the point where the blow was received—on the side of the head over the petrous portion of the temporal bone. One fracture ran toward the base of the skull; another fracture ran in a circular direction around the head. There was a clot of blood at the point where the blow was received, while there was another clot on the opposite side of the head from the counter-blow.

Dr. Coplin remarked that the character of the fracture, in his opinion, is rather dependent upon the size of the body which comes in contact with the head, than whether the injury is produced by a fall or a blow. If a man be hit with a club, the fracture will be of the same character as if he had fallen on the pavement. The facts in regard to this subject are brought out in the London *Reports of the Army Surgery*, which is somewhat analogous to the *Surgical History of the Rebellion*. It is shown that if a man falls and fractures his skull he will have the well-known radiating fracture; further, if he is struck with the stock of a musket, he will also have a radiating fracture. If he falls on a small body, like a shoe-scraper, the fracture will be similar to that produced by being struck by a similar body. I should be unwilling to decide in any given case whether a man with a punctured fracture of the skull had fallen upon or had been struck by the instrument producing the lesion; and I believe that the character of the wound in this particular reveals little or nothing of the manner of its reception other than the nature of the instrument producing it.

Dr. B. Alexander Randall said that he differed with Dr. Coplin in regard to one point. In a fall the velocity of the body is not apt to be great, but when struck by a missile the subject would be struck down by a rapidly moving body. It would act like a pistol-ball fired against a pane of glass, which would make a clean hole through the glass without fracturing it. The speed of the missile has an important influence on the nature of the injury.

Dr. William E. Hughes: I think that there can be no question that Dr. Randall is right, and that there is some such law as Dr. Formad has enunciated. There is, however, one class of cases in which this law

does not hold good, and that is in children. A child will fall upon an almost flat surface and have a small comminuted fracture without any radiation. I recall one instance in which a child, after a fall on the curb-stone, had a comminuted fracture about the size of a dollar, perhaps smaller, without any radiation whatever. At what age the rule commences to hold good would be of some importance to determine. The rule would be of some importance in cases of epilepsy or other conditions following in later years, the prognosis being better where it was probable that the fracture was localized rather than where the injury had produced extensive destruction of the skull.

Dr. H. F. Formad concluded as follows: I must repeat my definition of the difference between fracture produced by a fall and that produced by a blow. I did not state that the fracture from a fall is a radiating one. It is exceedingly rare that it is radiating. As a rule, unless the person falls from a considerable height or against a projection, there is simply a longitudinal fracture which goes obliquely or directly meridianally over the head; so that if I see a longitudinal fracture, a fracture leading to the base, especially without comminution, I most emphatically express the opinion that I believe it to be due to a fall rather than a blow. I do not think that a man falling against a cane would be likely to have a depressed fracture, for the velocity of the fall would not be great, and the skull coming in contact with the body would be more likely to crack than to yield in any particular part. As to the fracture from a blow, it is very evident, as Dr. Randall and Dr. Hughes agree, that if a body with considerable velocity strikes the skull it will produce a fracture which will not extend; whereas, if the person falls against a stone, nothing but the ordinary fracture is likely to occur, because the body has no great speed. *June* 26, 1890.

---

### 5. *Gunshot injury of the head.*

Exhibited by Dr. H. F. Formad.

I have here an interesting specimen of gunshot wound of the skull. The ball went through the forehead from side to side, and the specimen shows the point of entrance, the point of exit, and the ball. The point of entrance is a small opening, while the point of exit is larger. The former is only slightly larger than the ball. The ball went through the brain and the other side of the skull, but had not force enough to pene-

trate the scalp. One feature of gunshot wounds of the skull is that the bullet is always greatly distorted by passing through the cranial walls. They are often much more distorted than is this one. Frequently they are broken into two or three pieces. *June* 26, 1890.

---

6. *Fracture of skull, without the usual immediate symptoms.*

Exhibited by Dr. H. F. Formad.

Dr. Formad called the attention of the Society to a fractured skull, the fracture in itself presenting nothing of especial interest. The man had been struck some days previously on the head by a large lump of coal. This occurred on Sunday; nothing was suspected, and the man went to his home as usual. Several days later the patient feeling badly, a physician was summoned and found in the wound a small piece of coal and several spicules of bone. The man was removed to the University Hospital, a slightly depressed fracture recognized, and trephining was performed (Wednesday). On Friday night the patient died, and upon post-mortem examination a large abscess of the brain was found beneath the site of fracture.

He also mentioned a case recently before his notice in which a drunken man accidentally received a blow upon his head from a horse's hoof. The man got up and walked to his home, and for a time little was thought of the affair. After two days, however, he became unconscious, and after three and a half days died. On opening the skull there was removed as much as half a pound of clot.

Dr. Joseph Leidy, Jr., in connection with these cases, mentioned by Dr. Formad, of long duration of life after fracture of the skull, recalled a case of depressed fracture, which occurred in West Chester, in the person of a Polish laborer. The external wound was but small; there were no immediate effects, and nothing was done, the scalp wound meanwhile healing. Feeling some discomfort, however, the man was advised to visit the Pennsylvania Hospital, which he did, coming by train from Phœnixville, and walking from the station to the hospital (a matter of a mile or mile and a half). But little history could be elicited from the patient because of his inability to speak English; he presented no symptoms. The scalp wound had healed on his admission; he complained now and then of slight headache. No pain on pressure over the wound or rise in temperature, and there was absence of chills. The man there-

fore was merely retained in the wards under observation. He continued convalescent, aiding in the light duties about the wards, until the ninth day, when a convulsion followed by unconsciousness occurred, quickly followed by death. On post-mortem examination there was found a large abscess beneath the squamous portion of the petrous temporal bone, extending into the temporo-sphenoidal lobe. *November* 13, 1890.

---

### 7. *Tubercular arthritis.*

Exhibited by Dr. J. H. Lloyd and Dr. De F. Willard.

Dr. Lloyd, presenting the specimen, remarked: When the excitement about Koch's lymph prevailed I had a number of cases in the Home for Crippled Children suffering from tubercular bone or joint disease.

One of these, a boy, æt. 3 years, had a marked tubercular ostitis of the inner condyle of the femur and the opposite portion of the head of the tibia. There was no very active tubercular process in the joint at the time, and there was absence of evidence of tubercular deposit in other parts of the body. With Dr. Willard and others I administered five injections of Koch's lymph, giving first one-third of a milligramme, and gradually increasing to one, one and a half and two milligrammes. After the second injection a characteristic reaction, with elevation of temperature to 102°, took place, and a scarlatiniform rash broke out over the body, especially over the buttocks, more discrete, however, than the rash of scarlatina. There was very little local reaction in the joint at first. Several weeks later scarlatina appeared in the neighborhood, with several cases in the Home, and the employment of Koch's lymph was suspended. One month after the first injection the joint became swollen, red and painful, and apparently filled with fluid. The temperature took on a hectic type. Whether these symptoms, so far removed from the administration of the lymph, were due to the treatment is a question. The symptoms became more and more pronounced and operation was counselled by Dr. Willard. One week ago the joint was operated on; a large amount of pus was found in the joint. There were large carious cavities in the inner condyle of the femur and in the head of the tibia; a communicating abscess led up under the quadriceps muscle. The operation was a prolonged one, and the boy did badly. By the judicious use of stimulants, however, he was supported through the operation; but he failed to react, and about twelve hours after the operation died.

These specimens of the involved bones illustrate the changes mentioned. I cannot say that I regard the result of this case as being distinctly due to the use of the lymph; but it seems to me that in such a case a prolonged operation is of doubtful propriety, and in future I should prefer amputation.

Dr. La Place said: I have also lost a case under similar circumstances, a case of tuberculosis of the knee-joint. The symptoms were the usual ones; the patient had been a sufferer for years, and had been under the regular course of treatment by Koch's lymph. Coming to operate upon the joint, there were found large suppurating cavities about the part, extending along the bone. There were twelve abscesses in the tibia alone. The part was scraped and for six days the patient did very well. Then there occurred a severe hemorrhage, which was checked; but presently there occurred another, and from its effects the patient died. Although the proximate cause of death was the hemorrhage, the liver was found enlarged and fatty; so also the kidneys. The pericardium was adherent to the heart, and both lungs were adherent to the costal pleuræ. The heart seemed to be normal, but above the aortic valves there were several suspicious points. The brain was somewhat congested, but there was no tubercular deposit found. A curious feature in the operation was the presence of numerous and large fungosities in the joint—at any rate, what once would have been called fungosities. They were soft, easily picked out and well marked from the normal tissues around.

Dr. Lloyd remarked, in closing, that a careful autopsy had been made upon the patient, but that it failed to show any tubercular deposit anywhere in the body; except in this one joint there were no evidences of disease at all in the child. *March* 26, 1891.

## III. THE DIGESTIVE SYSTEM.

### 1. *Cancer of the stomach.*

Exhibited by Dr. J. Kahn.

The specimen I have the honor of bringing before the Society this evening is one taken from the body of John B., admitted to the Philadelphia Hospital April 26, 1889. He was 75 years of age, a resident of Philadelphia, a shoemaker by trade. No satisfactory family history was obtained. He had been generally a healthy, hearty man, and indulged freely in alcoholics when young. He sought admission to the hospital because of a severe diarrhœa. This appeared to be his only malady—a simple enteritis—and toward it treatment was directed.

On August 1st, when he came under the care of Dr. Musser and the writer, his condition was as follows: He was very emaciated; subcutaneous fat had apparently disappeared; the eyes were sunken and cheeks hollow; he was very anæmic, the skin dry and harsh. Examination of the heart, lungs, and kidneys gave negative results. The abdomen was scaphoid; there was no pain nor tenderness, and no mass could be found on palpation. The appetite was fair; the tongue dry and slightly coated. At no time in the course of the disease was there any vomiting. Temperature inclined to be subnormal; the mind was wandering, and later in the disease he became delirious. Patient died of exhaustion August 30, 1889.

The notes copied from the hospital protocol, dictated at the autopsy by my chief, Dr. Musser, are as follows: The stomach was slightly dilated. In the lesser curvature near the pylorus two carcinomatous ulcerations were found—one flat, of the size of a silver dollar, soft and pale, with pigmented surface; the other fungoid, extending fully one inch above the surface, its structure firm, its surface congested.

The small intestine presented no lesions. The large intestine, near the rectum, contained a few superficial ulcers and abrasions, small in size. The mucous membrane throughout the large intestine was very smooth and congested, especially in the cæcum.

The liver weighed forty-seven ounces; it presented no lesions.

*September* 12, 1889.

2. *Cancer of the stomach.*

Exhibited by Dr. J. Kahn.

The following specimen is that from the body of Nicholas K., æt. 53 years, a laborer, admitted to the Philadelphia Hospital August 31, 1889. He was a fairly well nourished, muscular man, in a stupid, nearly comatose condition. The feet were swollen, pitting on pressure; the eyelids œdematous; the heart was hypertrophied; radial artery hard and elongated. The patient gave evidence of abdominal pain and tenderness; but careful examination of the region revealed no organic lesion. The bladder was empty; a specimen of urine obtained some hours after admission showed moderate amount of albumin, granular and hyaline casts. Patient was supposed to be suffering from uræmia, and was treated accordingly.

From the history obtained some days after admission it was learned that the patient had been obliged to quit his work as laborer on the railroad-bed, because of the developing renal symptoms, two weeks prior to his admission to the hospital. There had been noticeable loss of flesh for three or four months, and he had complained of abdominal pains, but had not been known to vomit. No reliable family history could be obtained.

The second day in the hospital he voided quite a quantity of very bloody urine. By the fourth day, though the mental state had improved, the general condition was not so favorable. The pulse was rapid and weak; the abdomen scaphoid, still painful and tender. The stomach was irritable, the ejected matter consisting of nourishment mixed with light-yellowish liquid, but containing no blood. Upon this date the patient voided forty-eight ounces of urine. The sixth day his general condition became less favorable; pulse very rapid and feeble; mind wandering; vomited frequently. He died the eighth day after admission.

The notes from the protocol, dictated by Dr. Musser, are as follows:

*Stomach* not large; in the lesser curvature, toward the cardiac orifice, the coats were invaded by malignant disease, extending up to the œsophagus. The two-thirds of the œsophageal orifice toward the fundus were not involved. The infiltration seemed to have infected all the coats, occupying an area three inches along the lesser curvature and four inches transversely. Portions were pale and dense as if cicatrized, and other portions, the seat of recent large ulceration, not smaller than a

quarter of a dollar. There were three of these ulcerations; one extended to the muscular coat of the stomach, its floor not seeming to be infiltrated with carcinoma; the edges adjacent to the malignant mass were continuous with the original infiltration, while the edges away from the ulcer were thickened, clean-cut, and not undermined. On the surface the tissues were matted together (stomach, omentum and pancreas), and there was undoubted carcinomatous subperitoneal infiltration. The glands adjacent were the seat of secondary deposits. Half an inch from the primary mass toward the greater curvature a submucous white mass was to be seen, evidently secondary to the original lesion, probably arising from the lymphatics. The mucous membrane over the surface was almost gone.

*Kidneys:* The right was enlarged and weighed eight ounces; cystic; capsule adherent; its pelvis filled with clotted blood. The left organ was atrophied; weighed four ounces. No calculi nor carcinomatous invasion. The bladder was normal.

The *liver* showed peri-hepatitis over the anterior half; its structure was soft, and the organ was congested. The glands at the transverse fissure were the seat of secondary carcinoma.

The *heart* weighed eleven ounces. The left ventricle was much enlarged; muscle quite firm, measuring three-fourths of an inch in thickness; the valves normal. The right ventricle was somewhat dilated.

*September* 12, 1889.

---

### 3. *Sarcoma of Liver.*

Exhibited by Dr. J. L. Rothrock.

W. S., æt. 34 years, salesman. Family history good, always healthy until December, 1888, when he noticed a swelling in the epigastrium. Admitted to the Philadelphia Hospital, September 19, 1889. No marked symptoms save vomiting and a tumor, which could be plainly felt in the epigastrium, pressure over it producing pain.

During the following night he became unconscious, and continued so until death, which occurred two days later. During this time the most striking symptoms were marked contraction of inspiratory muscles of chest, not synchronous with respiration, and elevation of temperature beginning eighteen hours before death, the highest point reached being 107.6° F., about six hours before death. At this time the body was cov-

ered by a copious eruption of sudamina, and respiration was Cheyne-Stokes in type. Pulse 160. Pupils equal, dilated. Died September 21, 1889.

*Autopsy. Thorax:* On under surface of sternum to the right side, about the attachment of the diaphragm, three masses about the size of a walnut were found attached to the bone and cartilage by fibrous tissue. No pleural adhesion except lower lobe of right lung, which was attached to diaphragm by dense mass.

*Abdomen:* On opening, contained some fluid.

*Liver* quite large, weight nine and a quarter pounds, yellow, and on the surface numerous nodules about the size of walnuts. On section it presented a marbled appearance, the dark normal liver structure contrasting with the light color of the nodules.

*Gall bladder* contained about four ounces of thick green liquid and was adherent to surrounding structures by firm adhesions. Under the liver, surrounding the pancreas, were at least eight masses varying in diameter from one to two inches. *Spleen*, weight seven ounces. Mesenteric glands not enlarged. No ulceration in stomach or intestines.

Careful examination of brain, eyes, testicles, and other organs showed to gross appearance no lesion. Microscopical examination of specimen showed it to be sarcoma. *September* 26, 1889.

---

### 4. *Cancer of Stomach.*

Exhibited by Dr. A. A. Eshner.

G. W. K., æt. 78 years, was admitted to the ward of Dr. Steinbach at the Philadelphia Hospital on May 23, 1889, with an ulcerating epithelioma on the left side of the face in the region of the angle of the jaw. The general nutrition was impaired and intelligence enfeebled. The patient vomited after taking food, solid or liquid, but complained of no pain.

From his friends it was learned that five years before, while being shaved, he was cut with a razor. A small growth formed at the spot, gradually increasing in size. Five or six weeks before admission he was noticed to vomit whenever he took food, of whatever nature. The matter ejected had a frothy appearance, but did not seem constituted of the food. There was no pain associated with eating, though the patient is stated to have felt as if the food were obstructed at a designated

situation corresponding with the termination of the œsophagus. Notwithstanding a morbidly increased appetite and indulgence in a liberal diet, the patient had been gradually losing flesh for six or eight months. Mental failure had set in three months before.

Restricted to a milk diet, the vomiting almost entirely ceased. The patient lost ground, however, and on June 21st he somewhat suddenly died, unconsciousness having first been noticed a short time before.

*Autopsy*—was made under the direction of Dr. Formad. The body appeared to be that of an old man, much emaciated and highly anæmic.

At the left angle of the lower jaw and beneath the ear, involving in part its lobe, was an area of superficial ulceration of ovoidal outline, perhaps two inches by one and three-quarter inches in extent.

All the serous cavities contained moderate excesses of fluid.

The *heart* appeared rather small, but weighed eight and a half ounces. It displayed a condition of concentric hypertrophy, particularly upon the right side, with cavities diminished in size. The muscular structure was of a brownish color. The coronary arteries were exceedingly rigid and atheromatous. At the apex of the heart, on its pericardial covering, was a white patch of attrition. The mitral leaflets and aortic cusps were thickened and there were atheromatous deposits on the inter-ventricular septum opposite the anterior leaflet of the mitral valve.

The *lungs* were emphysematous.

The *spleen* was enlarged, cyanotic and displayed an excess of fibrous tissue.

The *kidneys* were distinctly indurated from a hyperplasia of the interstitial connective tissue; in size subnormal. The two organs weighed eight and a half ounces. The changes appeared rather senile than inflammatory.

*Stomach:* At the cardiac end, and involving about two inches of the adjacent œsophagus, was an ulcerating cancerous growth with indurated edges, occupying an area of perhaps five square inches and largely confined to the lesser curvature. This had made its way through the walls of the stomach, which was adherent to the under surface of the left lobe of the liver, into which the growth had extended, and had here also broken down. The liver in this region showed distinct extension of the new formation and presented an area of softening of the size of a hen's egg. Adjacent to this there was a small whitish nodule, but there were no other evidences of metastatic invasion. Several of the lymph glands in the immediate neighborhood and some of the mesenteric glands were enlarged. The rest of the stomach showed thick-

ening of the mucous membrane from chronic gastritis of long standing. The remainder of the alimentary canal showed no morbid changes.

In the *brain* the ventricles were distended with fluid. The cerebral substance was congested and pigmented, the latter change perhaps due to post-mortem influences. *September* 12, 1889.

---

### 5. *Chronic dysentery.*

Exhibited by Dr. H. F. Formad for Dr. J. H. Musser.

This colon exhibiting the lesions of dysentery was obtained from an Irishman, æt. 56 years. He was admitted to the Philadelphia Hospital, September 9, 1888. The family history was negative. He was married, had had one child; was a drinking man, and had had syphilis. The following are notes taken September 17, 1889: Had constant pain in the stomach three weeks before admission; stomach said to be dilated; bowels constipated; feet and legs had been swollen for three days, pitting on pressure.

Examinations of urine since admission have given negative results.

The temperature taken at various periods of a few days each since admission, shows a slightly febrile process, though the periods thus recorded ended with normal temperatures. The old history sheets record the presence of a double aortic murmur, which can be heard at present time. Has no cough; the feet are not swollen.

*September* 13. Patient was taken with a severe attack of dysentery, the bowels moving every half-hour or so; moderate pain and tenesmus, the stool small, slimy, bloody. Had considerable abdominal pain and tenderness experienced in left iliac region.

Temperature has been subnormal; pulse strong and full, but noticeably of a Corrigan character; extremities cool.

18*th*. Numerous stools—small, bloody, slimy. Pulse intermitting.

20*th*. General condition improved; temperature 95° to 97°; very little blood in stools; not so much tenderness in iliac region. Has hiccough at times.

23*d*. General condition improved; skin warm and dry, extremities also. Temperature continues low; number of bowel movements decreasing and are more bilious in appearance; tongue is heavily coated, as it has been throughout the attack.

25*th.* Patient raised up in bed to take a glass of milk, fell back and out of bed; *died three minutes later.*

*Autopsy.*—Alimentary canal shows results of chronic dysentery, the whole of the colon being much thickened, ulcerated, congested, and showing great enlargement of the follicles; slight catarrh of stomach and small intestines.

Chronic endocarditis. Aortic leaflets thickened and decidedly dilated. Mitral shows a few atheromatous patches, but appears to be competent. Sacculated aneurismal dilatation of aorta.

*Liver* enlarged and fatty. *Kidneys* cirrhotic.

*September* 26, 1889.

---

6. *Gastric ulcer opening into cavity in spleen.*

Exhibited by Dr. J. L. Rothrock.

B. M., æt. 45 years, colored, laborer, family history good. Previous history of malarial fever and rheumatism. Admitted to Philadelphia Hospital, October 14, 1889, suffering from failure of compensation, due to cardiac dilatation.

Vomited almost invariably a short time after taking solid food and often after liquids. No history of hæmatemesis. Often complained of pain in epigastrium, though nothing could be made out on palpation. Stated that he had been troubled with this pain for several years.

*Autopsy.*—Body of medium-sized, well-nourished negro; general anasarca present.

*Thorax:* Old adhesions through left pleural cavity and over lower lobe of right lung.

*Left lung* crepitant, rather large, firm, from long-standing chronic œdema.

Lower lobe of *right lung* similar in appearance to that of left. Pericardium contained rather more than usual amount of fluid; no adhesions.

*Heart* globular, muscle soft, flabby; right ventricle dilated; wall thin; tricuspid orifice considerably enlarged. Marked dilatation of right auricle. Left auricle moderately dilated, walls very thin in some places. Left ventricle unchanged. Mitral and aortic valves normal; papillary muscle mottled, indicating fatty changes.

*Abdomen:* Considerable fluid in peritoneal cavity; no adhesions. Stomach of abnormal size, walls thin. No change in gross appearance of internal surface, except at point opposite spleen, where a small opening admitting the tip of the finger was found communicating with cavity in spleen. Lining of cavity firm, smooth, extending into spleen to depth of half an inch.

*Spleen* small, soft, pulpy; capsule much thickened and adherent to surrounding structures.

*Pancreas* large, firm, indurated, cuts almost like cartilage.

*Kidneys* both large, firm; capsule stripped easily; cortex and medullary portion dark-red color. *December* 12, 1889.

---

7. *Cancer of head of pancreas.*

Exhibited by Dr. A. Stengel.

The specimens which I shall exhibit are from a man, æt. 65 years, a laborer, of bad previous history, who died at the Philadelphia Hospital. The clinical study of the case was made with great care, but nothing definite could be determined as to the cause of his symptoms, excepting that the suspicion of cancer of liver and stomach was entertained. The patient was brought in from the out-ward of the hospital suffering with extreme ascites, vomiting, moderate fever, and great prostration. The color of his skin was sallow, yellowish, suggestive of cachexia. The matters vomited were dark-brownish at times, but never of the appearance of coffee-grounds. There was no œdema of body; the urine contained little or no albumin and no casts. The abdomen was so tensely distended by fluid and flatus that the liver could not be felt. The bowels were kept constantly loose. The heart was found enlarged, but no valvular lesion determined.

From the previous history of the patient, the absence of signs of kidney or heart lesion, or of abdominal tenderness, it was held that the ascites was due in the main to cirrhosis of the liver; though the cachectic appearance of the patient and the progressive wasting provoked the suspicion of malignant disease—even in the absence of palpable evidence. The patient steadily grew worse, and died of exhaustion.

The *autopsy*, a few hours after death, revealed a hypertrophied heart without valvular lesion, a small two-pound liver, and fresh general peritonitis. There was considerable clear fluid containing lymph-flakes in the

abdominal cavity, and the pancreas which I here show you is the seat of a cancerous growth about the size of a fist, involving the head of the organ and more or less intimately connected with the duodenum by adhesions. *December* 12, 1889.

---

8. *Sarcoma of omentum and liver.*

Exhibited by Dr. A. Stengel.

By courtesy of Dr. J. M. Anders, I present to the Society a large sarcoma of the omentum and liver. These specimens were removed post-mortem from C. B., a white man, æt. 35 years, a native of Switzerland, and laborer by occupation. No family history of tumor. His mother died of dropsy; his father is living, 62 years old, and in good health.

*Previous history:* Scarlet fever in childhood. Married; has three children; wife miscarried once. Had an attack of gonorrhœa years ago.

*History of present illness:* In May, 1889, patient first noticed a small tumor low down in his abdomen, but gave it little thought. The tumor increased in size and he had some indefinite abdominal pains—never severe and cutting—with slight diarrhœa and headache. Later he complained of frequent micturition, and of severe abdominal distress when his bowels became constipated. In the early part of October, 1889, he passed portions of a tapeworm; and on October 9th was placed on anthelmintic treatment, which resulted in the passage of a long portion of the body of the worm. The patient was so much weakened by this treatment, however, that he was not again subjected to it.

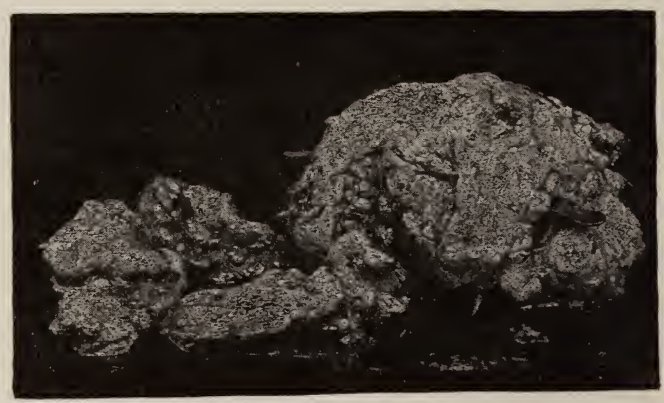
Meantime the abdominal mass continued growing. It was hard, distinctly nodulated, and slightly movable. There was neither pain nor tenderness. The lower portion could be followed back above the pubes, as though extending down into the pelvis. The entire growth could be distinctly outlined. On rectal examination a mass was found in the pelvis and seemingly extended into the abdomen. Soon after the patient came into the hospital his liver was noted as not enlarged and the edge not felt. So it remained until a few weeks before the patient's death, when it began to extend below the ribs and was felt as a large mass in the epigastric and right hypochondriac regions. Examination of urine was negative—no albumin, sugar, or casts.

Thus the case continued; the patient emaciated little, if any; his general health was fair; he often required purgatives, and felt comfort-

able after thorough evacuation of the bowels. During the last week of life he lost flesh rather rapidly, and died suddenly, apparently in great pain, after a few hours' unconsciousness.

*Autopsy.*—Body of a fairly well preserved white man. Abdomen tense and distended. Bluish-green discoloration over abdomen. At once, on opening the belly, a large pinkish-white, markedly furrowed and lobulated mass was exposed. The larger part of this extended from the pubes (with a small prolongation extending to the brim of the pelvis) to the ensiform cartilage. There was an adhesion to the abdominal wall just above the pubes. Above, the mass was seen to depend from the great omentum, at the root of which was attached a smaller mass. These two portions involved the omentum alone and were not connected with

Fig. 1.



Omental sarcoma—the larger mass being in the body of the omentum, the smaller at its attachment.

any of the neighboring structures except by a few inflammatory adhesions. Together they weighed thirteen pounds (Fig. 1). On section they were firm, about the consistency of a fibroid tumor, and of pinkish-white color. In the centre of the larger growth was a cavity the size of a large apple, containing a little whitish watery fluid. A mass was also found attached to the peritoneal covering of the sigmoid flexure. This presented the appearance and structure of the others and was the size of a large fist. A third growth filled the cavity of the pelvis and was attached to the rectum and partly to the bladder. This was contiguous to the abdominal growth but not at all connected with it. A fourth was attached to the ascending meso-colon, and adhered to the abdominal wall.

The *liver* was slightly adherent to the diaphragm. Everywhere projecting from the surface were small and large nodes. In removing the organ one of the small ones became detached from its position and left a smooth-walled cavity lined with a fibrous capsule. On section these nodes resembled exactly the large abdominal growths. The liver weighed over eleven pounds. The gall-bladder was stained a bright yellow, but was otherwise normal (Fig. 2).

*Spleen* was normal.

*Kidneys* were markedly congested, otherwise of healthy appearance.

The *lungs* were normal except the lower lobe of the right, which was compressed by the enlarged liver.

The *heart* was healthy in structure.

Fig. 2.

Anterior surface of liver, showing nodes of secondary deposit.

From the intestines was obtained a medium-sized tapeworm—the tænia mediocanellata or beef-worm. Unfortunately, the exact seat of the worm was not determined.

On microscopical examination the tumor proved to be a round-celled sarcoma.

The case is interesting clinically and pathologically; clinically, from the great size attained by this omental mass without the production of any marked symptoms of distress, from the entire absence of pain, and from the absence of emaciation or cachexia. Pathologically, the case is of interest from the rarity of sarcomata in this situation, and from the size of the tumor itself, and the liver. *December* 12, 1889.

9. *Gall-stone, occlusion of the cystic duct, false passage from the gall-bladder into the duodenum, and multiple hepatic abscess.*

Exhibited by Dr. A. V. Meigs.

The patient, a woman æt. 40 years, was admitted into the Pennsylvania Hospital, October 28, and died October 31, 1889. She said she had enjoyed good health and had not been intemperate, but eight years ago had had an attack of jaundice with nausea and vomiting, from which, however, she recovered entirely, to be seized with the present illness only three weeks before admission to the hospital. She was ill on and off with pain in the belly and back, and had from time to time nausea and vomiting and soon became jaundiced. There was constipation and complete loss of appetite, but no chill.

On admission she was thin and ill-nourished and quite deeply jaundiced; there was fever (temperature 103°), and some chilliness. She had pain in the back and above the umbilicus and the urine contained albumin, epithelial, hyaline, granular, and blood-casts, and was bile-stained. Unfortunately, no very careful examination was made owing to the pressure of work in the ward and as she was in the hospital only a few days.

At the *autopsy* the liver was found to be about natural in size; the duodenum was adherent to its under surface, and in this region the tissues were matted and tangled by inflammatory adhesions. The gall-bladder, to which the pancreas was firmly adherent, was thickened, distorted, and much reduced in size. It contained one concretion of the size of a large filbert, which lay near the natural outlet. The cystic duct was entirely closed, but near the fundus of the gall-bladder there was an opening through which a large-sized probe could be passed from the bladder to the intestine, the opening into the latter being four inches above the natural outlet, which latter, together with the pancreatic duct, was found in the usual position, and both were patulous for a short distance from their outlet in the intestine. In the liver itself the bile-ducts were found enormously enlarged, and by slitting them open they could be followed almost to the upper surface of the organ directly beneath the capsule.

Owing to the relation of parts having been somewhat damaged in the removal of the organ it could not be found out whether the direct outlet of the bile into the intestine was shut off or not, but the presumption is that it was closed. On cutting into the substance of the liver numerous

rather small depots of pus were discovered and the pus looked as if it lay in vessels cut across—either bile-ducts or the portal veins, it was not determined which.

*Microscopical examination* was made of pieces of the lung, uterus, kidney, and liver.

Portions of the *lung* were quite solid, the air-cells being filled with red blood-corpuscles, and there were areas made up of bright-red staining cells due to some inflammatory process.

The *uterus* contained a great excess of bloodvessels, and these were much diseased, overgrowth from their inner surface having taken place to such an extent that many of them were almost closed. Much of the tissue also was so greatly impregnated with blood-coloring matter that it would not take the carmine stain.

The *kidney* had evidently been diseased for some time before death, for the arteries were thickened, the cells in a bad state of preservation, and the Malpighian loops often somewhat bare of epithelium and very variable in size.

The *liver:* In the sections the bile-ducts were a prominent feature, the columnar cells showing beautifully, and in many positions the calibre of the ducts contained brownish, structureless material. There was a rather old clot in one of the bloodvessels. The liver cells were in some places badly preserved, again the nuclei very red and proliferating, and in places being seen to be undergoing fission. Where nuclear activity was present there was very great variability in the size of the nuclei. The best cells in all instances were seen at the periphery and the most degenerated at the centres of the acini. In some places at the centres of acini the cells had disappeared entirely and only the trabeculæ were visible.

There were many small abscesses in various states of destruction, and at their margins the liver cells were always flattened by pressure and the spaces between them often filled with red blood-corpuscles, it being difficult to say whether these were contained within their natural boundaries or had escaped into the tissue.

It was impossible to determine from the microscopical appearances where the abscesses originated, though it almost seemed as if they had begun with inflammation in the portal veins, for there were in all instances bile-ducts and branches of the hepatic artery to be seen next the abscesses, and nowhere had total breakdown of the material taken place. the very centres even of the damaged areas staining red and consisting of granular, swollen, and disintegrated cells.

One section was made of an enlarged bile-duct. This was carefully traced from the fissure of the liver nearly to the upper surface beneath

the capsule and there dissected out with a piece of liver attached; the duct had a calibre of from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch. It presented in many respects an appearance closely resembling that of an ordinary branch of the portal vein, and without the knowledge of what it was, obtained by the dissection, it would have been difficult or impossible to determine that it was not a somewhat altered portal vein. Its calibre showed no trace of the characteristic cells which line bile-ducts. In the piece of liver removed with the duct the secreting cells were quite different in their appearance from those in sections taken elsewhere, their natural arrangement, in irregular columns, with capillaries between, was entirely lost and the cells themselves were much shrunken, distorted, and filled with pigment. The hepatic arteries presented overgrowth of the intima.

The case was instructive for several reasons. There was the existence of the false passage opening from the fundus of the gall-bladder into the duodenum four inches above the natural outlet, for which there is no explanation except it was the result of inflammation, most probably caused by the presence of a gall-stone, or possibly of some distention ending in abscess discharging into the intestine. It is in the highest degree probable, though this could not be ascertained to be certainly the case, as the specimen was somewhat injured in the removal, that the outlet of the bile was entirely closed. This view is supported by the great dilatation of the bile-ducts within the liver which was found, and the multiple abscesses present. The section of the large bile-duct demonstrates that from microscopical examination alone it might not be easy to attain a final differentiation between a bile-duct and bloodvessel if altered by disease. The state of nuclear activity exhibited in the secreting cells is of interest. *December* 26, 1889.

---

10. *Specimens from a case of hepatic obstruction.*

Exhibited by Dr. F. A. Packard.

For the privilege of showing this specimen I am indebted to Dr. Wm. Pepper, under whose care the patient had been and for whom I performed the autopsy. The main point in the clinical history, so far as this specimen is concerned, is the prolonged existence of jaundice, with occasional attacks of hepatic colic in a man past middle age. At the autopsy all of the tissues were deeply stained with bile. The liver

was adherent over the posterior, upper, and right lateral surfaces, and projected prominently below the costal margin. There were no evidences of peri-hepatic trouble except for the adhesions mentioned. The portal vein and hepatic artery were normal in size and general appearance. The gall-bladder was at first overlooked, but was later found in about its normal position, but much shrunken and filled with about a half-drachm of dark, thick pus. The wall of the viscus was found to be much thickened and puckered. No opening could be found leading into the cystic duct, but a very fine probe passed from the inner extremity of the gall-bladder through a narrow passage channelled in a thick band of connective tissue about a half-inch in length, that bound the inner extremity of the gall-bladder to the upper portion of the duodenum. The probe entered the duodenum at a point about one inch from the pyloric ring. The common duct was dilated to fully the size of the portal vein, and indeed was at first mistaken for the latter. Upon slitting up the common duct the walls were found to be thickened, and the mucous membrane rugous. The cystic duct was represented by a dilated blind pouch of a length of about five-eighths of an inch, its walls being much thickened, its calibre about equal to that of the common duct.

The liver was large, firm, and of a slate color. Its edges were rounded and gave a sensation of toughness when handled. Upon slitting up the branches of the hepatic duct they were found to be much dilated, even to the periphery of the organ just beneath the capsule. Upon opening one branch of the duct a cavity of the size of a marble, filled with dirty gray pus, was entered. No other pockets of pus were found.

The pancreatic duct was patulous, and entered the duodenum through a papilla situated at the normal position.

It is evident from the appearances found at the time of the autopsy and from those now shown, that a calculus had ulcerated through the wall of the gall-bladder into the duodenum after the walls of the latter organs had been glued together by inflammatory material. Doubtless this inflammatory new tissue had become stretched, in time forming the strong, channelled fibrous band here seen. *December* 26, 1889.

---

### 11. *Cancer of rectum ; colotomy.*

Exhibited by Dr. J. B. Deaver.

The subject which appeals to every surgeon whose lot it is to see many cases of carcinomatous disease of the rectum, is that of colotomy. My object in writing a paper on this topic is to record the result of my

experience in the two operations—lumbar and iliac, not inguinal, as it is frequently called; to advocate the establishment of an artificial anus early in the disease, when it is not feasible to remove the involved portion of the bowel; to speak of the indications for the operation, and of operative procedures other than colotomy, for malignant disease of the large intestine elsewhere than in the rectum.

Having performed both lumbar and iliac colotomy, I am convinced that, in the majority of cases, the lumbar operation is preferable, as well as the most logical, for the following reasons:

1. Notwithstanding the opening of the peritoneal cavity is now a factor of comparatively little importance when deciding between what shall be an intra- or an extra-peritoneal operation, I believe that, when the same end can be accomplished without opening the peritoneum, the patient should be given the benefit of it. We must admit that an additional risk, be it ever so small, is coupled with an intra-peritoneal operation.

2. Regarding simplicity. The essential element of success in any operation is a correct knowledge of the surgical anatomy of the part. The lumbar operation is as simple as the iliac, especially when the intestines are greatly distended, as they are apt to be in the advanced stages of the disease, when symptoms of obstruction are pronounced and when acute obstruction supervenes upon chronic. In opening the peritoneal cavity where the abdomen is distended, the protrusion of the small intestine through the wound complicates the operation. When the abdomen is distended, the lumbar operation is simplified by the bulging of the colon into the wound, thus making it more accessible. The advocates of the iliac operation claim that the additional advantages gained by opening the peritoneal cavity, providing the disease has not extended too far, are: to verify the diagnosis, to determine definitely the extent of the disease, to resect and reëstablish the continuity of the canal. I do not regard the diagnosis in carcinomatous disease of the rectum or the sigmoid flexure assuming the form of a growth or a stricture, with symptoms both local and general, together with the history of the case and what can be learned by an examination of the abdomen and of the rectum (if need be, assisted by anæsthesia), as at all difficult. Where the sigmoid alone is involved, the additional comfort gained by a resection would not warrant the patient assuming the risk consequent upon this operation, in comparison to that of establishing an artificial anus through the loin.

The advocates of the iliac operation, again, produce the following arguments in its favor, namely:

1. The impossibility of opening the small for the large intestine. In answer to this I can say, this mistake cannot occur in the lumbar opera-

tion unless the peritoneum is opened, which should not occur to a careful surgeon, non-interference with the peritoneal cavity being the important factor in the lumbar operation. Should the surgeon be unfortunate and open the peritoneal cavity in the lumbar operation, mistaking the small for the large intestine would be a gross anatomical error. The presence of one or more epiploic appendices tells positively that it is the large intestine, these never being present as constituents of the small intestine. Again, the arrangement of the longitudinal muscular fibres of the large intestine into three separate bands, and the sacculated condition of the large intestine where both are not obscured by distention of the gut, assist in deciding the question. The small intestine may be met with so distended as to equal or exceed in size that of the circumference of the large; under such circumstances, the question of difference would be still more difficult for the surgeon not familiar with the anatomical peculiarities of both. The percentage of cases in which the descending colon does not hold its normal position to the abdominal walls posteriorly is so very small as, in my mind, not to enter into the question of deciding between the two operations. In the large number of bodies I have seen dissected in the anatomical rooms of the University of Pennsylvania, I have yet to meet with a single case of pronounced anomalous arrangement; yet, I would not be understood as disputing the fact. Mr. T. Bryant's having operated in 170 cases, in but one of which he found it necessary to prolong his incision forward, to find the colon at the brim of the pelvis, is the best argument to offset that set forth by the supporters of the iliac procedure.

2. The position of the anus in the iliac operation is claimed to be a more convenient one for the patient to keep clean, as well as for the adjustment of the necessary pad which has to be constantly worn. I admit that an artificial anus in the abdominal walls anteriorly can be kept clean more conveniently by the patient than one in the loin; but the former situation, owing to the recession of the abdominal walls in certain positions assumed, allows the pad to shift. This is not the case in the loin, as the latter offers a more fixed and stationary point to retain the pad.

3. Those who prefer the iliac operation claim that, owing to the meso-sigmoid being longer than the descending meso-colon, it renders the stitching of the bowel to the edges of the wound easier; also that there is less tendency to prolapse of the gut following this than the lumbar operation. I confess that the long sigmoid meso-colon will permit of the bowel being drawn up much further than will the comparatively short descending meso-colon. This offers, however, no advantage over the

lumbar operation, as the length of the descending meso-colon is such as to allow the surgeon to bring the bowel up far enough to suture it to the edges of the wound of the abdominal walls, before or after it is opened, without any difficulty. In the case of a very fat subject, where the abdominal walls are flaccid, the last stages of the lumbar would be somewhat more difficult than that of the iliac operation.

The formation of the spur, the barrier to the passage of the contents of the intestine from the upper into the lower opening, is claimed as being more pronounced after the iliac than the lumbar operation. This has not been so in my experience; on the contrary, I have been very much disappointed with the iliac operation in this respect. True, I have only performed two of the iliac operations; in both of these the patients were greatly annoyed by the collection of feces in the rectum above the seat of the trouble, and the consequent rectal tenesmus excited by the same. In my lumbar colotomies, I follow the plan adopted by Mr. Bryant, namely: Having exposed the descending colon by an incision carried in the line of the normal crease situated about midway in the costo-iliac space—the structures divided being the skin, the superficial and deep fasciæ, the posterior border of the external oblique, the anterior border of the latissimus dorsi, the lumbar fascia with the posterior borders of the internal oblique and transversalis muscles, and the anterior border of the quadratus lumborum and the fat covering the posterior surface of the bowel, which should be separated by the fingers—it is grasped at the site of the posterior longitudinal muscular band, rotated well forward on its longitudinal axis, brought into the wound, and there fixed. Operating in the above manner, I have formed a most excellent spur, serving its purpose very satisfactorily to the patient as well as to myself. I would restrict the iliac operation to that class of cases where the upper portion of the sigmoid flexure is not involved, and where it is done first as an exploratory measure—not in a diagnostic sense, but for the purpose of determining whether resection is justifiable, when, if it be impossible, the operation is completed as an iliac colotomy. In the two iliac colotomies that I have performed, the cases not being urgent, I divided each operation into two stages: the first consisted in fixing the bowel in the wound (colorrhaphy), and the second in opening the bowel at the end of seventy-two hours. It is not necessary to give an anæsthetic when the bowel is opened, it being almost painless. I follow this course in the lumbar operations as well, when the urgency of the cases does not demand an immediate opening.

Indications for the operation: Carcinoma of the rectum, either in the form of a growth or a stricture, too high to render practicable the

removal through the perineum or back by excising the coccyx, and, perhaps, one or two of the lower segments of the sacrum, or through both the perineum and the back.

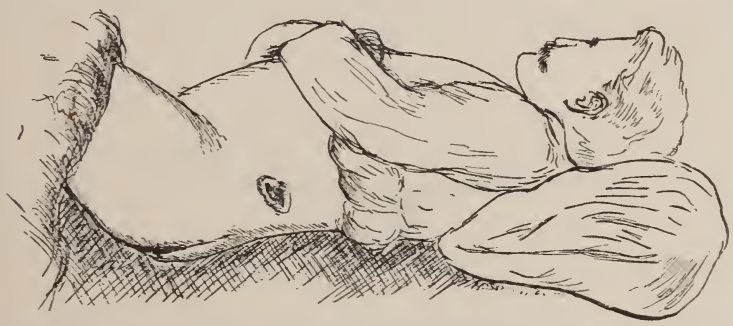
Stricture of the terminal part of the sigmoid flexure and of the upper part of the rectum, with symptoms of obstruction, too high to treat successfully by dilatation, divulsion, or division.

Incurable cases of recto-vaginal or recto-vesical fistula. Extensive and otherwise incurable cases of ulceration of the rectum, making life a burden to the patient.

Imperforate anus, where operation through the perineum and back proves of no avail.

Irremovable growths of the pelvis, causing obstruction by making pressure upon the rectum. In this connection, I will make mention of a

Fig. 1.



Showing the artificial anus. The two openings drawn apart so as to bring out the spur.

supra-pubic cystotomy that had to be done by a colleague in one of our hospitals for retention of urine, occasioned by pressure of such a growth against the base of the bladder. Here it was only possible to pass a catheter when the patient (male) was anæsthetized.

When should the operation be done? I believe the position held by most surgeons in regard to the operation of colotomy, namely, that it is only to be thought of as a last means of relief in cases of carcinoma of the rectum and sigmoid flexure, also in strictures of small calibre otherwise incurable, is a too conservative one. We must all admit that the chief factor in the rapid growth of carcinoma involving the bowel is the irritation to which it is constantly subjected, first, by the peristaltic action of the bowel, and, secondly, by the passage of fecal matter through the involved portion; therefore, the position I maintain is, that the

sooner the operation is done, there being, of course, no doubt as to the character of the trouble, the better, and for the following reasons: First, by the early establishment of an artificial anus, the patient is relieved of the severe pain caused by the contraction of the enfeebled bowel in attempting to expel its contents; to relieve this, it is necessary to administer anodynes which interfere with digestion and assimilation. Second, the diarrhœa, so frequently a common symptom in these cases, does not occur. Third, the danger of total obstruction, one of the causes of death in unrelieved cases, is prevented. And, lastly, the opportunity afforded of subjecting the affected bowel to frequent antiseptic irrigation, by which the progress of the disease is very materially stayed. I am convinced that in the case of lumbar colotomy I here report, showing a drawing of the artificial anus, by frequently washing out the lower bowel with a one-half per cent. solution of creolin (preventing the collection of the excretions of the growth, which cannot be done thoroughly until an opening is established with the bowel above the seat of the growth), as

Fig. 2.

Pad.

has been done conscientiously by my resident surgeon, Dr. C. D. Hamman, the patient's comfort has been greatly added to; also that the progress of the growth since the operation has been but little, if any.

Thus far, I have spoken simply of left lumbar and left iliac colotomy. Owing to the modern advancement made in intestinal surgery, right lumbar and right inguinal colotomy are operations, I hope, of the past. I trust, at this time, no surgeon who is abreast with the times would think of either of the two last-mentioned operative procedures, but would open the abdomen of his patient, remove the growth—if possible, by resection—and reëstablish the continuity of the canal, either by lateral implantation, or, better, lateral apposition by perforated decalcified bone plates or rubber rings. Where it is not possible to remove the growth in the cases last referred to, sooner than establish an artificial anus, make a lateral anastomosis.

In carcinomatous disease of the upper portion of the rectum, colotomy offers the only operative means of relief. In carcinomatous disease of

the sigmoid flexure, or of the descending colon, lateral anastomosis by ileo- or colo-rectostomy may be feasible, but here I give preference to lumbar colotomy; elsewhere I prefer anastomosis.

James R., hostler, æt. 38 years. Admitted to the German Hospital July 26, 1890. Family history negative. Has had pain on defecation, and discharge of blood-stained matter. On examination, an ulcerating mass was found high up in the rectum, involving the entire calibre of the gut.

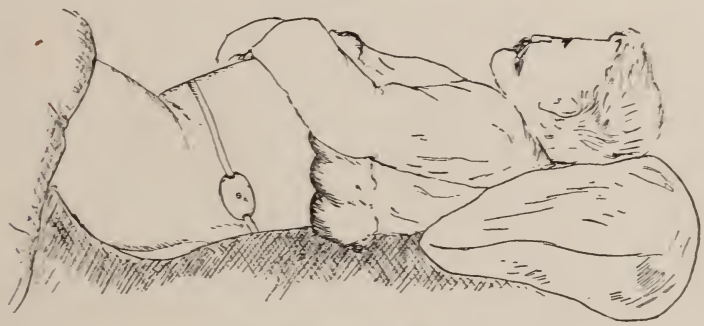
*August* 16. Left lumbar colorrhaphy performed.

17*th*. Considerable tympanites.

18*th*. Gut opened; immediate relief from tympany. Wound was dressed twice daily. Primary union. Patient discharged September 6th.

The patient was able to regulate the movement of the bowels at the end of two weeks. He improved markedly in health and strength.

FIG. 3.



Showing pad adjusted.

*December* 17. Patient has been doing light work as a hostler for six or eight weeks. His bowel is washed out twice a week with a one-half per cent. solution of creolin. *January* 9, 1890.

---

12. *The intestinal lesions of starvation.*

Exhibited by Dr. H. F. FORMAD and Dr. BIRNEY.

The case referred to in this title is that of a woman, æt. 60 years. Once in good circumstances, finally she became the subject of extreme poverty. She was too proud to beg, and in the city of Philadelphia,

with its 1,000,000 inhabitants, managed to starve to death. It has been proved that she had no food for five days previous to death. She was last visited on Wednesday or Thursday of last week, and she probably died on Monday of this week. When last seen she was lying on a mattress on the floor, and stated that she had eaten nothing for a few days, and that her son, who is a worthless fellow, was out looking for work. The person who then saw her sent her a basket of bread, buns, and some blackberry brandy, as she had complained of diarrhœa. When the same person went there on Tuesday she was found dead, with all of this food untouched. It was learned that the son had left on Thursday and had not returned. When the woman was found on Tuesday she did not have the appearance of having been dead long. The body was emaciated to a terrible degree. There was no adipose tissue in any part of the surface of the body and no peritoneal fat. All of the glandular organs were remarkably anæmic. The liver presents the appearances seen in acute yellow atrophy. The pancreas is extremely small. The spleen is diminutive. All the organs are extremely dry.

Opening the alimentary canal I found in the whole colon marked evidences of dysentery of a subacute type, similar to what is seen in prison dysentery. There was also distinct enteritis extending to the ileum. The ileum is very much thickened. In some places there are excavations bordering on ulcerations. Even in the colon there does not appear to be true ulceration. The inflammatory conditions in the small intestine become less marked as we ascend the bowel. There is congestion of the whole alimentary canal. The whole canal was absolutely empty There was nothing but a little brown mucus in the stomach and in the large and small intestine, perhaps not more than three or four ounces.

In the stomach there is a distinct gastric ulcer. The ulcer has been healing, and there are distinct cicatricial lines in the mucous membrane. There are a few marked hemorrhagic infarctions. These suggest that there was a great strain upon the stomach.

Dr. Birney also has specimens from a case of starvation, which he removed only an hour ago. After Dr. Birney has given the history of the case, I shall demonstrate the specimens.

Dr. Birney then presented the following case. The history of this case is as follows: The person was an unmarried woman, æt. 23 years; a school-teacher by occupation. She was in fair health until last August. At that time she took cold during a menstrual period, and while still in bed received word that the young man to whom she was engaged had been killed by an accident. From that time she was more

or less despondent. She was treated by several physicians for womb trouble. December 23, 1889, I was called to see her. She was suffering acute lumbar pain and pain in the head, and was screaming with agony. She had vomited freely and attributed it to medicine that she had taken. I gave morphia hypodermically and had to administer one-fourth of a grain before there was much effect. For several days she suffered exquisite pain, and I was compelled to give considerable morphia. The dose was increased until she took seven-eighths of a grain morning and night, and that did not put her to sleep. In a few days what seemed to be an abscess of the frontal sinuses ruptured, and there was a free discharge from the nostrils and from the mouth. The bowels had not moved for some time, and an injection of water was used, producing an evacuation but causing great pain. The stomach would retain nothing and I tried to feed her by the rectum, but this caused such pain that it had to be abandoned. I tried to get her to take food by the stomach, but she could not do so. Everything that could be thought of was tried. On December 25th and 26th she passed considerable blood and complained of pain in two distinct spots over the stomach. The idea of gastric ulcer suggested itself. From the time I saw her until her death she was unable to permit the least light to reach the eyes, keeping them covered with a black cloth. The pain in the head disappeared in about a week, and then the pain in the stomach became excessive and morphia had to be continued, but the dose was gradually reduced and finally almost no morphia was given—simply water with a little brandy. All the senses were quite exquisite. Everything that she took by the stomach made her sick. At first she had no desire for food, but afterward she seemed to be hungry, although it was impossible for her to retain food.

She was kept bathed with whiskey and rubbed with olive oil; she would not permit the use of cod-liver oil. The mind was perfectly clear until the last few days. She complained of great roaring in the ears, which I attributed to anæmia. During the entire sickness she expectorated a great deal and the matter had a disagreeable odor. From the time that the injection was given up to the time of her death, a period of forty-four days, she had no passage from the bowels. For the past two weeks there was a great deal of trouble with the bladder and the urine had to be drawn. Toward the last there seemed to be retraction of the urethra, making it impossible to pass a rubber catheter. She died this morning at seven o'clock in a state of extreme emaciation.

Dr. H. F. Formad: We have here all the viscera, but I have not had time to examine them. There seem to be some feces in the large

bowel. There is some hard material in the head of the colon and some in the sigmoid flexure; the rest of the bowel is practically empty. All the organs are extremely anæmic. The stomach does not present any ulcer or other lesion which would explain the inability to take food. The brain is remarkably anæmic, and she must have died in convulsion; for in all convulsive diseases I have found the brain anæmic. There appears to be no lesion of the brain. The gall-bladder is dilated and filled with a large quantity of very dark bile. In the former case the bile was quite pale.

Dr. LaPlace here questioned Dr. Formad as to his experience with gastric ulcer in cases of starvation; to which

Dr. Formad replied: I have had no experience with starvation. I have seen cases in which death was attributed to starvation, but I did not study them with sufficient care to be able to say anything about them. I do not think that we can bring gastric ulcer in connection with starvation. In my case the gastric ulcer may have had something to do with causing the starvation.

Dr. LaPlace then said: The reason that I asked this question was because in several post-mortems, where death could be traced to starvation, there has been a highly irritated condition of the stomach and often some ulceration. I was disposed to attribute this to auto-digestion of the stomach. It would be interesting to establish whether in starvation there might not be through a secondary irritation a secretion of gastric juice which would digest the stomach and cause ulceration.

Dr. E. N. Brush: I have had some little experience in taking care of people who have attempted to starve themselves and have made autopsies in those whom I did not succeed in saving. The lesions found were similar to those shown to-night by Dr. Formad. Gastric ulcer was not present very frequently, nor was there any observable digestion of the stomach, although some authorities think that this occurs in cases of prolonged starvation. I have had many patients refuse to take food, but I have always succeeded in keeping food in them in some way. Dr. Birney's case seems to have been one of commencing melancholia with a large element of hysteria. I have seen such cases and have satisfied them that I was in earnest in my attempts to keep food in the stomach, and have usually succeeded. I have only two or three times attempted the use of nutrient enemata; my experience has been that it is a disgusting process both to the patient and the physician, and devoid of any practical results.

Dr. F. A. Packard: The condition of the gall-bladder seems of interest, and seems, from the large amount of bile, to show that no

impulse was sent up from the papilla to the gall-bladder, rather pointing to the view that the patient had probably taken no food for some time.

Dr. H. F. Formad: These cases are of the utmost importance, and I think that the Society cannot pass them without expressing something definite. There is not much to be said about the first case. She was deprived of food for only a short time, certainly not over a week. The second case should have been presented in better form, but that was impossible on account of lack of time. There are several elements in this case which makes starvation, in the true sense of the word, highly improbable. In the first place, she was a hysterical woman. There is nothing in the world more deceptive than a woman, especially a hysterical woman, a school-teacher, a spinster. She may have taken some food. It seems inconsistent with the presence of feces in the bowel that she had taken no food for fifty-two days. At the same time the highly atrophic condition of the organs makes the case one of excessive interest. I hope that this case will be carefully examined and reported on at the next meeting.

The condition of the blood was of great interest to me in both of these cases. It has been noted that after battles very few of the wounded die from hemorrhage, and this has been attributed to the fact that they have been without food and water for many hours. In these cases I examined for coagulation of the blood. In the old woman I found coagula of tremendous dimensions. Both the left and the right side of the heart were filled with large coagula, not only in the auricles, as is usual, but also in the ventricles. In the right side was a large clot which probably had been forming for days. In the second case there were no clots. This is another circumstance which would be against the view of starvation. *February* 13, 1890.

---

13. *Specimens from a case of typhoid fever.*

Exhibited by Dr. J. Daland.

These specimens were taken from a patient who died at the University Hospital. The woman was a Swede, æt. 24 years. She was delirious on entering, and a careful examination as regards the previous history was impossible on account of her language and her delirious condition. It was ascertained from her friends that she was a domestic, and had been complaining for a week prior to admission. Fever seemed to be the

only symptom that she had complained of. On admission, numerous spots were found on the abdomen; the temperature was 104.5°, and she was wildly delirious, requiring physical restraint. This condition remained practically unchanged for six days, when she succumbed. The diagnosis of typhoid fever was readily made.

At the autopsy we obtained the following: At the ileo-cæcal valve there is well-marked ulceration; as the bowel is traced upward the lesions grow less numerous, but approaching the jejunum a number of follicles greatly enlarged are plainly visible. The intestinal lesions were of interest to me because the intestine was not uniformly involved. We found, as usual, the lesions most marked at the ileo-cæcal valve; then some three feet of the bowel nearly free from disease, and then, for one or two feet, evidences of enteritis and follicular enlargement. Cases have been reported where the ulceration involved the duodenum, and even the stomach. I would ask why it is that in the great majority of cases the poison seems to have a special affinity for the last twelve inches of the ileum? The cause of death in this case seemed to be the excessive amount of poison, and the absence of treatment during the first week of the disease.

It may be of interest to mention that a grape-seed was found in the appendix, and this may possibly illustrate one of the steps of ulcerative appendicitis. It seemed easy for the appendix to become chronically inflamed from the irritation set up by the typhoid poison, and the grape-seed be shut off by closure of the orifice of the appendix, and, later, acting as a foreign body, set up ulcerative appendicitis.

*February* 13, 1890.

---

14. *Specimen from a case of intestinal obstruction.*

Exhibited by Dr. M. J. Rosenau.

This specimen was removed from a colored woman, æt. 78 years. The diagnosis was fecal impaction. There was obstinate constipation and a moderately distended abdomen. The patient died, and this remarkably distended gut was seen extending from the pelvis to the fifth intercostal space, and, laterally, from flank to flank. There was no volvulus or fecal impaction. The distended bowel proves on examination to be one portion of the sigmoid flexure. The ascending colon does not seem to be involved. The only lesions found were evidences of old pelvic inflam-

mation giving rise to strong bands of adhesion, holding the sigmoid flexure down, but not causing actual constriction. This probably embarrassed the movements of the bowel, and led to the production of this distention, which was so great that at places the peritoneal covering of the bowel has ruptured. There was no acute peritonitis.

Dr. William E. Hughes: Some time ago I showed to the Society the intestine of a child three years of age. The bowel was so distended that it would hold thirteen or fourteen pints. The affection is a well-recognized one in children. It is not due to obstruction, but seems to have followed repeated attempts to move the bowels by copious enemata, thus paralyzing the intestinal walls and allowing dilatation to take place. It seems to come about just as dilatation of other hollow viscera develops. Some such cause may have operated in the case reported to-night.

*February* 12, 1890.

---

### 15. *A case of Choctaw or jungle fever.*

Exhibited by Dr. J. F. Berlet.

The history as obtained from the brother-in-law of the patient is as follows:

E. W., German by birth, æt. 36 years, and laborer by occupation. Nothing special in the family history.

Previous history: No definite information could be elicited concerning specific infection. Patient had always been a hard drinker. He was apparently a healthy man until he went to the Indian Territory eleven years ago; he was there five years, during most of which time he suffered from malaria. When he returned to this city, six years ago, he was having a chill, followed by a fever and a sweat about once a week; this continued up until time of death. At this time he was also jaundiced. About two years ago he began to have severe hemorrhages from the bowel, recurring about once a week, and the urine was continually the color of porter. At this time he began also to be troubled with œdema of feet and legs. He was never troubled with hemorrhoids, and never vomited blood. His appetite up until time of death was voracious, and he had a severe lienteric diarrhœa. Fat was present in the stools. When seen three days before death, was very weak and emaciated, much jaundiced, feet and legs very œdematous; had a severe cough, and at times slight hæmoptysis; was also suffering much from

dyspnœa. He said that he noticed his liver was getting larger by the fact that he had to keep getting his clothes enlarged.

Demonstration of specimens from above case by Dr. H. F. Formad: I made the post-mortem in this case, and it proved to be one of hypertrophic cirrhosis of the liver. This is shown by the microscopic examination of the liver made by Dr. Guitéras.

The external appearance was one of the most intense jaundice. There was a great deal of œdema of the legs, and there was extreme emaciation.

There was nothing peculiar about the thoracic organs. There was deep-yellow pigmentation of all the organs. The abdomen contained considerable fluid, and the first thing that presented itself was this huge liver, which weighed exactly ten pounds. It was hard and firm, and of a deep brown color. The spleen was also enlarged, hard and dark; it must have weighed three pounds.

The alimentary canal throughout showed catarrhal change; there was distinct catarrhal enteritis, with rather prominent congestion, showing that there was decided acute trouble. In fact, I believe that there had been a good deal of vomiting and purging of blood, and there was blood in the alimentary canal. There was no enlargement of the lymphatic glands anywhere in the body. The gall-bladder was distended, and contained a quantity of colorless bile.

I regret that Dr. Guitéras is not here to demonstrate the microscopical sections. They present the appearance of typical hypertrophic cirrhosis. There is more connective tissue than liver tissue; the hepatic cells present themselves as insignificant islets. Another interesting feature is that the connective tissue is not interlobular. It does not constrict the liver acini by surrounding each acinus, but by penetrating between the liver cells; and we have the peculiar appearance of islets of liver cells with the connective tissue between them. There are very few well-defined liver acini to be seen. The connective tissue is interspersed indiscriminately between the liver cells. I believe that these conditions are peculiar to hypertrophic cirrhosis. It is the same as the French picture in their writings under the head of *sclerosis hypertrophie* —that is, cirrhosis which is intra-lobular.

I believe that one French writer attributes the want of contraction in this form of cirrhosis to the fact that the connective tissue has nothing to pull upon, because it does not surround anything. In this form of cirrhosis the surface of the organ is perfectly smooth.

Another interesting feature is one which I observed years ago in hypertrophic cirrhosis, and that is the remarkable proliferation of gall-

ducts. The number of biliary capillaries appears to be tenfold what is usually found. There are areas in which there is practically nothing but biliary capillaries replacing the liver tissue.

The pancreas presented a nodular enlargement which, at the time, I thought might be cancerous, but such was not the case. In fact, the case had been diagnosed as one of cancer of the liver, and in one of the hospitals where he had been an operation was decided upon, but the patient left the institution before it was done.

Dr. Judson Daland: This so-called Choctaw fever is probably nothing more than malarial fever, which, occurring among ignorant people, is given a new name. The case is particularly interesting from the clinical side. There was hemorrhage from the bowels, and I would ask if any local explanation for this was found? In the second place a considerable quantity of fat was passed, although the man had not much adipose and did not eat much fat. The hardened mass in the head of the pancreas might have occasioned pressure upon the pancreatic duct, preventing the escape of the pancreatic fluid, and accounting for this symptom.

Dr. H. F. Formad: No explanation of the hæmoptysis or of the hæmatemesis was found. The thoracic organs were eminently normal. There was intestinal irritation, but no ulceration was found.

Dr. James Tyson: The hemorrhages of ordinary cirrhosis are commonly explained by the congestion produced by the stricture of the portal vessels by the contracting connective tissue. We know also that it is one of the most satisfactory things that could happen. The patients are relieved by the hemorrhage, and, as a rule, there is immediate improvement. I have never known a patient die from hemorrhage from the stomach or bowels as a result of cirrhosis of the liver. I believe that in the light of the autopsy it is probable that what was spoken of as hæmoptysis was really hæmatemesis.

Dr. Berlet: I did not see the blood brought up by this man. My statements are based entirely on the history given by the family. The color of the blood was black, and this would be in favor of hæmatemesis instead of hæmoptysis.

Dr. Vansant: I am somewhat surprised at the stress laid upon the location of the connective tissue as being intra-lobular. My experience in many cases of hypertrophic cirrhosis is that the connective tissue is largely around the smaller bile-ducts which lie inter-lobularly, and that there is a marked increase of the connective tissue between the acini. The non-contraction of the organ is difficult to explain. The situation of the new tissue around the smaller gall-ducts may serve to explain it.

Dr. A. V. Meigs: I have sections from two cases of hypertrophic

cirrhosis. The first case was that of a woman whose liver weighed fourteen pounds. So far as one can see, the whole organ is converted into a mass of connective tissue. It is impossible to determine where the connective tissue does lie, whether in the portal channels or intra-lobularly. The greater portion of each section consisted of connective tissue, with a few liver cells here and there. The tissue had evidently contracted as it grew, for it was as dense as any ordinary firm connective tissue.

The second case was that of a man where the condition of the liver was quite different. There has been described under the head of Charcot's hypertrophic cirrhosis, the form of disease in which the supposed increase in the number and the overgrowth of the bile-ducts takes place. In this case there were islets of liver tissue surrounded by connective tissue, in which those things which look like bile-ducts lay. I find that an acknowledged authority in pathology asserts that this is common in all forms of cirrhosis, in Laennec's contracting cirrhosis, in ordinary hypertrophic cirrhosis, and in so-called Charcot's hypertrophic cirrhosis. I do not see how it can be considered as firmly established that these are bile-ducts.

This is an ordinary case of hypertrophic cirrhosis. In Charcot's cirrhosis there is a nodular condition of the surface of the liver. In the second case to which I have referred there were immense neoplastic formations in all branches of the portal system.

Dr. James Tyson: I confess that this matter of hyperplasia of the biliary capillaries is something that has escaped my notice, and it seems to me that this is a difficult thing to bring about in cirrhosis, if we accept the modern views of the histology of the biliary capillaries—that is, that they are simply spaces left by the liver cells which surround them, and, by some authorities, without even a basement membrane. We should expect that the constriction which destroys the liver cells would also destroy the biliary capillaries. There must evidently be contraction in these cases of hypertrophic cirrhosis, or we should have the presence of liver cells. The description given of this new formation suggests a sort of adenoma—that it might be new gland tissue. The histology corresponds with that of adenoma of the liver.

Dr. G. G. Davis: It is very difficult to demonstrate the presence of walls of the biliary capillaries, if such exist, and I think that they do exist. This difficulty, however, is so great that it would be interesting to know how it has been proven that these spaces found in hypertrophic cirrhosis are really bile-ducts. The best method of demonstrating the existence of these ducts is by the infusion of the coloring matter into the blood-current of the living animal. This is obviously impossible in

these pathological cases. I think that it is impossible to demonstrate them by any staining methods. One observer claims to have demonstrated the epithelial lining by nitrate of silver, but this has not been confirmed. *February* 27, 1890.

---

16. *Strangulated femoral hernia.*

Exhibited by Dr. W. L. Coplin.

The first specimen is from a case of strangulated femoral hernia which I was called to see on Tuesday one week ago with the idea of operating. When I saw the patient the hernia had apparently gone back. She was told to stay in bed, but did not do so. On Sunday she ate a hearty meal and the hernia again came down, but there was no vomiting. She, however, did not send for a physician until Tuesday evening. When the doctor arrived the woman was unconscious and almost dying. I was sent for, but we concluded not to operate.

The specimens show general peritoneal inflammation with abundant deposit of lymph. Death seems to have been due to some form of poisoning, something like ptomaïne poisoning. There was active delirium, twitching in the back of the neck, and the eyes were rolled up. *February* 27, 1890.

---

17. *Miliary tuberculosis of peritoneum and lung with purulent discharge for eight months.*

Exhibited by Dr. J. Daland.

These specimens were removed from a patient of Dr. Abbot, of Bryn Mawr. The patient, a boy, æt. 12 years, became ill two years ago with acute enteritis. He recovered from this, but gradually declined in health and complained of abdominal pain, and six or nine months before his death pus discharged from the umbilicus and this continued until his death. There was a family history of tuberculosis. The principal question was to the exact location from which this discharge came. Many of the physicians who saw the case thought that it came from the abdominal wall. At the autopsy a probe inserted at the umbilicus passed upward and inward a distance of four or five inches. On open-

ing the abdominal cavity the whole peritoneum showed evidence of chronic peritonitis. The pus came from a cavity bounded by the left lobe of the liver on one side, the stomach on the other, the diaphragm above, and the intestines below. The lungs were infiltrated with tubercular nodules. There had been no pulmonary history, with the exception of occasional cough and some shortness of breath.

This case is of interest on account of the long continuance of the purulent discharge. I should like an expression of opinion as to the exact cause of the purulent discharge. Did it begin two years ago as a tuberculosis? Is the tubercular process likely for some local reason to begin in the peritoneum rather than in the lung? I should also like some facts in reference to the curability of tubercular peritonitis and some explanation why those cases that recover show no more signs of the disease.

Dr. James Tyson: I am afraid that some of Dr. Daland's questions will go unanswered for some time. I had at my clinic a few days ago one of the most remarkable cases that have come to my notice. The patient was operated on by Dr. Shimwell for supposed tubercular peritonitis. The macroscopic appearance was that of tuberculosis. The patient recovered, but the question why recovery takes place is an interesting one. The explanations suggested have not been satisfactory.

Dr. Daland's specimens bring to my mind another autopsy. The case was one apparently of abscess in the hepatic region, and was supposed to be an abscess of the liver. It opened and there resulted a fistulous tract whose situation was similar to that described by Dr. Daland, but it apparently went directly into the stomach. At the autopsy the fistulous tract was found to pass down between the stomach and the liver to a large hard morbid growth, which was a cancer of the pylorus. A pus-collection had formed in this mass and had passed to the exterior. The abscess was the result of a circumscribed peritonitis. Another interesting fact is that while there was pyloric obstruction and dilatation of the stomach there had been no vomiting, and I believe that cancer had not been suspected.

Dr. Vansant: In some of these cases of tubercular peritonitis there is a marked absence of pain. There was at the Philadelphia Hospital five weeks ago a colored boy with a tuberculous lung. He was going about the ward making no complaint of pain. One afternoon he went to bed remarking that he felt tired, and in a short time was dead. At the autopsy the whole peritoneum was found thickly covered with tubercles.

Dr. F. P. Henry: Is there not in these cases concomitant inflamma-

tion of the pleura? In my cases both have been involved, the pleural inflammation generally being primary.

Dr. John B. Deaver: I have operated on three cases of so-called tubercular peritonitis. In each case there was a distinct papillary condition of the peritoneum, but no other evidence of tuberculosis. Two of these cases died and one recovered. I do not consider the case that recovered to be one of tubercular peritonitis. I believe that it was one of ordinary peritonitis with a deposit of lymph. The success of operation in tubercular joint-disease is based upon the removal of all the tubercular matter. I do not see, therefore, why tubercular peritonitis should be cured by simple irrigation and drainage.

Dr. LaPlace: The explanation of the difference in results from the occurrence of pus in the peritoneal cavity as the result of acute inflammation and its appearance there as the result of a chronic change is an interesting pathological problem. It may be that in the acute disease the poison is a more acute one, producing septicæmia more directly. On the other hand, a person may become vaccinated, as it were, or rather saturated with the tubercular diathesis, and there is a local development of the trouble, and although some of it may be absorbed it does not produce the great change as in the acute disease. The chronic disease leads to the production of fibrous tissue, adhesions, and the closure of the lymphducts, and thus absorption is prevented.

Dr. J. M. Baldy: Because we do not know how an operation cures tubercular peritonitis it does not follow that it does not cure. If we say that it does not cure the disease, we must say that we cannot diagnose the disease either *ante-mortem* or *post-mortem*. In many of the cases operated on the bacillus has been removed and cultivated. This has been done by Dr. Marcy and by some German operators. In some of the German cases pulmonary tuberculosis has been present. The patients have lived a year or more and finally died of the pulmonary disease, thus showing that the disease was of a tubercular character.

Dr. John B. Deaver: The cases on which laparotomy have been performed have not been followed up long enough. The probability is that the surgeon has not seen the case after the operation. I have myself followed one case for nine months and in that time tapped her fifteen times; I do not believe that genuine tubercular disease is ever cured.

Dr. J. M. Baldy: The case of Spencer Wells lived for twenty years and died of some other disease. Dr. Martin's case lived from five to ten years, and from this case he cultivated the bacilli. Several of the German cases have lived over ten years.

Dr. Judson Daland: In regard to the case of Dr. Tyson the patient

has lived one year after the operation without any recurrence of the symptoms. A point in favor of the tubercular nature of the present case is the development of a tubercular condition in the right lung. A point in the physical diagnosis was the detection, by Dr. Slocum, of granular bodies in Douglas's *cul-de-sac*.

What has been said in regard to the latency of the symptoms is unquestionably true. These cases may occur with only slight tenderness, and slight distress referred to the abdomen, with progressive loss of flesh, strength, and color. *March* 27, 1890.

---

### 18. *Biliary calculi.*

Exhibited by Dr. IZARD.

On the 19th of this month I was called as county physician to view the body of a woman æt. 67 years. I first noted a remarkable discoloration of the skin, which was of an orange hue. The woman had been sick for six months and had complained of much distress in the abdomen, but rarely of acute pain. There had been abnormal appetite and great thirst. She had requested that a post-mortem examination be made. All the viscera were tinged of a yellow color, and the omentum, as well as all the fatty tissue in the body, had been absorbed. I found in the gall-bladder fifty-two stones and in the hepatic duct three. The largest stone was an inch in diameter. This was removed from the hepatic duct. For twenty years this woman had been complaining, and occasionally she was able to grasp a lump in the right side which evidently was the gall-bladder. The jaundice did not appear until twenty-four hours before death.

Dr. James Tyson: A short time ago I was present at an autopsy on a woman who was evidently as much jaundiced as the one reported by Dr. Izard. Two stones were discovered in the hepatic duct. The case had been subjected to exploratory laparotomy and the stones discovered, but their position was such that it was impossible to remove them, and the patient died several days later. *March* 27, 1890.

19. *Cancer of liver and peritoneum.*

Exhibited by Dr. J. Kahn.

This specimen is from a man, æt. 73 years, a shoemaker by occupation. There is nothing of interest in the family history. Three years ago he was admitted to the Philadelphia Hospital with some œdema, but no accurate notes were kept. He was again admitted on the 21st of last month after a sickness of three weeks. There was considerable œdema and abdominal effusion. It was supposed that he was suffering with cirrhosis of the liver and chronic nephritis. He was tapped and a quantity of the fluid removed. At the autopsy numerous cancerous nodules were found in the liver and peritoneum. The entire peritoneum was studded with nodules, probably cancerous. The seat of the primary growth could not be discovered. *May*, 8, 1890.

---

20. *Four stomachs from cases of poisoning.*

Exhibited by Dr. J. L. Hatch for Dr. Formad.

I have here four stomachs from cases of poisoning: one from bichloride of mercury, one from arsenious acid, one from cyanide of potassium, and one from carbolic acid. I have not the clinical histories, but wish simply to exhibit the specimens. In the hydrocyanic acid stomach there is a bright red appearance to the mucous surface of the viscus, and the odor of hydrocyanic acid can still be detected.

In the carbolic acid stomach there is excessive charring and the color is almost black; but the odor of carbolic acid cannot be detected.

In the arsenious acid case we have the so-called alligator appearance of the stomach, a condition pointed out by Dr. Formad as characteristic of poisoning from this agent.

The bichloride of mercury stomach is of a grayish color, and there is also some pigmentation in the mucosa.

Dr. Lawrence Wolff: Can the gentleman explain the dark color of the stomach in the case of carbolic acid poisoning? It is usually supposed that the eschar produced on mucous membranes by carbolic acid is of a white color. It is possible that the dark color is due to post-mortem changes, or it may possibly have resulted from oxidation of the

acid; as we know, urine containing carbolic acid becomes dark by exposure to the atmosphere.

Dr. Hatch: I do not know the reason of the discoloration, but in all the cases that I have seen, twenty-five to thirty, of carbolic acid poisoning the stomach has been dark. This stomach was black when it was removed from the body.

In regard to hydrocyanic acid poisoning, we find that those who use this agent to commit suicide are usually those who use it in their daily work. It is among watchmakers especially that this kind of poisoning is resorted to. *May* 22, 1890.

---

21. *Appendicitis with perforation.*

Exhibited by Dr. W. L. Coplin.

Through the courtesy of Dr. Capp, I made an autopsy in an extremely interesting case this morning. The case was one of appendicitis with perforation. Two weeks ago the patient, a lad æt. 14 years, was taken with vomiting, very slight abdominal tenderness, and acute diarrhœa.

The perforation can be well seen, as well as the general septic peritonitis which resulted. There were three perforations in the appendix. I wish to call attention to the marked inflammatory condition found in the lower part of the small intestine; the intestine is entirely covered with a layer of thick lymph. In the fossa on each side of the bladder was a collection of purulent matter. The small quantity of pain and the slight tenderness found in many of these cases is noteworthy. As a rule, the patients do not draw up the knees as in peritoneal inflammation. I have seen three cases in the practice of Dr. Hearn in which operation was done and the cavity drained; in no case was the appendix excised, and in two out of three cases recovery followed.

*June* 12, 1890.

---

22. *Hypertrophy of the wall of the stomach.*

Exhibited by Dr. H. F. Formad.

This specimen was removed from an old person found dead. It is, I think, simply a specimen of hypertrophic gastritis; I do not think that it is cancerous, as the enlargement is so evenly distributed. The growth is a little greater near the pylorus than at the cardiac extremity.

Dr. J. P. Crozier Griffith: I should like to say a few words in regard to this specimen. About 1882 I reported a similar case with Dr. Alexander Marcy. We designated it muscular hypertrophy of the stomach. At that time no similar case was known to us, and I am not sure that I have since seen a case exactly like the one we reported. It was a case of true hypertrophy; the muscular wall throughout was hypertrophied. The submucous connective tissue was also overgrown, constituting a cirrhosis. The hypertrophy of the muscular wall affected not only the muscular tissue on the inner side of the submucosa, but also the external muscular layer.

Looking at Dr. Formad's specimen, it will be seen that the thickness is internal to the layer of fat, and outside of that there is a thin whitish layer which is the serous coat, and it looks to the naked eye as a portion of the external muscular coat. It looks as though the hypertrophy were situated in the submucosa and muscularis mucosa. This specimen should be studied, and it would be interesting to know whether or not this is a widely disseminated carcinomatous growth. It would be still more interesting to know whether or not it is a case of cirrhosis and whether there is overgrowth of the muscular fibre itself. Since my case was reported there has been another at the Presbyterian Hospital, seen by Dr. Musser. The overgrowth was in the connective tissue and extended into the duodenum. *June* 26, 1890.

---

23. *Intussusception from a child.*

Exhibited by Dr. W. E. Hughes.

This specimen, one of intussusception, was removed from a female child, æt. 3 years, under the care of Dr. Girvin, of West Philadelphia. It is an ordinary specimen of intussusception. The intussuscepted bowel could have been distinctly felt by introducing the finger into the rectum. The symptoms were present for a little less than two days. The child was taken suddenly with abdominal pain and diarrhœa, and nothing much was thought of it; the next day it passed a large quantity of blood and continued to purge slightly. Vomiting occurred, and it went into collapse and died. The whole of the colon and a large portion of the small intestine is invaginated. It is impossible to restore the bowel to its proper position, and I do not presume that anything could have been done if the diagnosis had been made. *June* 26, 1890.

24. *Perforating ulcer of stomach extending into lungs; abscess of liver.*

Exhibited by Dr. W. E. Hughes.

This is a specimen of stomach and duodenum from the practice of Dr. Girvin. The patient was about 40 years of age, and for some time had been the subject of indigestion, and his health had run down in consequence. He had occasional attacks of severe pain in the abdomen. Last August he had an especially severe attack and went into a condition of collapse, from which it took him two days to rally completely. He was unable to resume his work, and the digestive symptoms became more severe. Some time later he began to have irregular fever of a hectic type, and later spat up large quantities of pus. He went on from bad to worse and died about last October, two months after the attack of severe pain. During this period he had several other attacks, but none so severe.

The post-mortem showed an ulcer of the cardiac portion of the stomach, which had perforated and was in communication with a large abscess bounded by the peritoneum, spleen, and diaphragm. This abscess cavity had communicated with the lung by a perforation through the diaphragm. Then there was a fistulous opening into a large cavity in the pulmonary structure communicating with two or three small bronchi. Immediately below the stomach was another ulcer, which had perforated posteriorly and was in communication with another large abscess cavity. This abscess had no communication with the first. There was also a mass of inflammatory tissue riddled with small abscesses. In addition to this there was an abscess of the liver which had burrowed into the portal vein and had come almost in connection with the abscess communicating with the duodenum. The curious thing about the case is that the man should have lived so long with such extensive disease.

I think that there is little doubt that the two ulcers were true ulcers, the one gastric and the other duodenal. They probably originated simultaneously from the same cause. I am rather inclined to think that the perforation of the duodenal ulcer antedated that of the gastric ulcer. *June* 26, 1890.

25. *Primary carcinoma of the stomach, with secondary deposits in the pancreas and liver.*

Exhibited by Dr. B. Brooke.

I have here the specimens of a case admitted to Dr. Hughes's ward in the Philadelphia Hospital in May of the present year. The man came in with a tumor on the right side and complained principally of gastric trouble. He was a German, æt. 27 years, by occupation a farmer. The family history as well as the previous history was negative. He was a moderate drinker of beer and used tobacco in moderation. He first noticed trouble early in April, when he began to have spells of vomiting after eating and a sense of fulness in the epigastrium, occurring half an hour to an hour after eating. About this time he detected the tumor in the right side, although it was not as large as it is now. For about three weeks he experienced very little trouble from it; but then he suddenly grew worse and was compelled to go to bed, and on the 16th of May he was admitted to the hospital. At that time the tumor extended from about two inches below the right nipple to within four inches or four and a half inches of the crest of the ilium and across to the other side to about the nipple line. The surface of the tumor was smooth, with few nodules, and the man complained of comparatively little pain. There was no jaundice, no swelling of the feet, no fluid in the abdomen. The stomach was examined as far as was possible, but it was only found that it was dilated; and the gastric symptoms were attributed to the pressure of the tumor. For two or three weeks the condition remained about the same, the tumor increasing in size; and on the 3d of June jaundice appeared. Up to this time the man's physical condition had been good; there was no sign of cachexia. About this date he began to fail markedly and cachexia appeared; and this mass of nodules over the liver became distinct. This appeared in the course of nine or ten days. Two weeks before death a small quantity of fluid was found in the abdomen, and the feet were slightly swollen. He sank rapidly in the ten days before death. Twenty-four hours before death the fluid increased in quantity notably, and the feet became much swollen. Three weeks before death pain became constant, and morphia in increasing doses was required. When admitted to the hospital the bowels were constipated, but on two occasions he had obstinate attacks of diarrhœa. Up to within two weeks of death he could sleep lying down, but afterward he had to sleep propped up in bed.

At the post-mortem this large liver was found. When the abdomen was opened a quart of fluid of a dark-brown color was discovered. At the pyloric end of the stomach there was found a colloid cancer, which involved about two-thirds of the pylorus. There was, however, no stenosis. The mesenteric glands were also involved. The head of the pancreas was attacked and slightly broken down. The only glandular involvement was in the abdomen. Some of the larger nodules in the liver have begun to break down. The organ weighed thirteen pounds. No microscopic examination has as yet been made. *June* 26, 1890.

---

26. *Symmetrical perforating ulcers of the stomach.*

Exhibited by Dr. W. Brooks.

The specimen I present is one of rare occurrence, of perforating gastric ulcers, symmetrically arranged, one on the anterior and one on the posterior wall of the stomach. It was a coroner's case, to which I was called to make autopsy.

*The history of the case:* B. M., female, æt. 32 years, white, married, residing in Somerton, Pa.; had been ill for some time, and had been treated for dyspepsia, for treatment of which she came to the city. The journey on the cars made her condition worse, so that when she arrived at Broad street station the Pennsylvania Hospital ambulance was called, and she was admitted to that institution July 5th. The resident diagnosed her case to be one of purulent peritonitis. Dr. C. B. Penrose performed laparotomy, but the patient died three or four hours after the operation.

The specimen I present shows a stomach opened along its greater curvature, with a perforating ulcer in its anterior wall and a similar one in the posterior. The anterior ulcer measures three-sixteenths of an inch in diameter, and is situated equidistant from the cardiac and pyloric orifices, one and a half inches below the lesser curvature. The posterior ulcer is larger than the anterior one, being half an inch in diameter; it is situated three-quarters of an inch below the lesser curvature, and is closer to the pyloric end of the stomach than the anterior ulcer.

Dr. Formad: Among about thirty cases of gastric ulcer that I have met with, I have seen only one similar to this, and that was in a woman of about the same age. The symmetrical situation of the ulcers is probably to be explained by the distribution of the nerves and vessels.

Dr. A. J. Smith: It has been my fortune to see two or three cases of symmetrical ulcers of the stomach. In each case the appearance suggested that the explanation was not to be found in the distribution of the nerves and vessels, but rather in the fact that when the patient was at rest the walls of the stomach came in contact, and in all likelihood there was a transference of infection from the ulcer to the opposite wall of the stomach. In one case which came under the observation of the President in an autopsy which I performed, there was a large perforating ulcer of the anterior wall, and on the posterior wall there was some softening of the mucous membrane. The latter was really a true ulceration, confined to the mucous surface; after the specimen had been placed in alcohol the ulcerated portion of the mucous membrane dropped out, and the position of the secondary ulcer on the posterior wall could be seen distinctly. In this instance I have mentioned, the anterior ulcer was undoubtedly the first; and it seems quite likely that by direct inoculation of the posterior wall from contact the secondary one in the posterior wall of the stomach arose. I feel that we should call upon such a simple explanation, rather than upon the more complicated ones of distribution of the nerves and vessels, to account for the occurrence of these symmetrical ulcers. It seems to me a very improbable occurrence that double embolism should always be at the bottom of these symmetrical ulcerations —a double embolism of such clear symmetricity—and in this case, too, if the stomach is held in its proper position it may be easily seen that this symmetricity is here almost perfect, although the specimen has not been so described by Dr. Brooks. Double thrombosis from neurotic fault is a suggestion of greater weight to me, although I must confess my inability to fully appreciate its method of action. The explanation I have proposed finds frequent illustration in the symmetrical ulcerations in flexures, and in the small ulcers of the mouth where often an ulcer of the gums is accompanied by a corresponding one on the buccal mucous membrane, arising, in all probability, from the irritating matters from the first lesion being brought into contact with the opposing healthy membrane. A similar method of production is readily conceivable in case of the walls of the stomach occasionally, and while probably it cannot always be called upon in explanation of symmetrical gastric ulcerations, I have no doubt that many instances are due to such a causation.

Dr. James Tyson: The idea of Dr. Smith does not strike me as being the most satisfactory explanation. It must be remembered that these ulcers are in the superior parts of the stomach, in the neighborhood of the pyloric orifice, where there is less likelihood of the solvent action of

the gastric juice than in the larger curvature, where the contents of the stomach gravitate, and that, particularly in ulcers of this kind, we have one explanation in embolism or thrombosis to account for their occurrence. I think that it is not impossible that a double embolism or double thrombosis might occur in the distribution of two vessels, and in that way the foundation be made for the formation of two gastric ulcers. The two ulcers in this specimen are not exactly symmetrical, and I should not expect that the apposition of the walls of the stomach would bring one of these ulcers over the other. They are an inch apart when you bring the surfaces of the stomach together. This is an ingenious theory, but it does not seem to me to be the most satisfactory explanation.

Dr. Ernest LaPlace: I am at a loss as to the etiology. I am as much interested in finding out the cause of the first ulcer as that of the second. We should probably find the same cause for the second as for the first. There may be a number of causes to start a gastric ulcer. They may have the same origin as the round perforating ulcers of the foot. They may be of nervous origin. They may be of a malignant nature. They may be due to thrombosis or embolism. It is impossible to say which is the cause in this case.

Dr. A. F. Müller: I recall the case of a girl, æt. 22 years, upon whom I made a post-mortem examination, who died of perforating gastric ulcer. It was a most beautiful specimen of thrombosis with ulcerating points. There must have been not less than twenty-five ulcerated points, and every one on the thrombus following the veins of the stomach. One of the ulcers was perforating.

Dr. Formad: There is no doubt but that gastric ulcers are caused by hemorrhage. Either by small minute hemorrhages, as in the case of Dr. Müller, which subsequently are ulcerated out by the action of the gastric juice, but these are rare; or, as is more frequently the case, by hemorrhagic infarctions due to embolism. This is shown by the fact that we see ulcers in the line of the vessels. I have seen them in all stages. I have in my collection stomachs showing simply a slight hemorrhage; another stomach with a large button-like hemorrhage; another with the hemorrhage partly eaten out; a fourth with it entirely eaten out, and a fifth with a perforation. The specimen of Dr. Brooks makes the thirty-first in my collection.

The point in regard to occupation is of interest. The disease seems to be most common among chambermaids and cooks. Most of my cases, with the exception of three males, belong to this class. The patients are usually under middle age. Only one case was old; that was one æt. 90

years. She had been treated for supposed cancer of the stomach for forty years. Three generations of physicians had treated her. At the post-mortem there were found three huge gastric ulcers. From their appearance, the erosion, the cicatricial contraction, and the thickening in the neighborhood of the lesion, it is not unlikely that they may have existed for half a century.

While abroad, I looked into this question of gastric ulcer, and if one is to judge by the number of specimens collected in the museums as an indication of the frequency of the disease, it would seem to be more frequent in France than in Germany. In the Dupuytren museum there are something over forty specimens. In Virchow's collection there are about sixty specimens. In the museum of the College of Physicians and Surgeons, in England, there are not so many specimens—perhaps twenty. I was told by the professors in southern Germany that the disease was much less frequent there than in the north of Germany. Gastric ulcer appears to be more rare in beer-drinking countries, and more frequent in wine-drinking districts and in parts where they take stronger beverages. All the cases of which I have made post-mortem examinations were drinking people—rather free drinkers, and in fact some of the women were heavy drinkers. *September* 25, 1890.

---

### 27. *Tubercular enteritis.*

Exhibited by Dr. A. J. Smith.

The specimen that I have here includes the greater portion of the small intestine, and is covered by a number of ulcers, perhaps several hundred. It was taken from a mulatto, æt. 44 years, who died in the Philadelphia Hospital sometime last July. The case was one of general tuberculosis, probably beginning in the lung as a tuberculosis with peribronchial involvement, the formation of a cavity, and the enlargement of the bronchial glands, followed by deposit in the supra-renal capsules and the appearance of tubercular enteritis. Before the specimen was cut open, the lymphatics of the mesentery showed beautifully the beaded arrangement due to the deposit of tubercles following out this mode of generalization. I have exposed a large portion of the bowel, and its entire length is marked by numerous ulcerations, of every conceivable shape. *September* 25, 1890.

28. *Specimen from a case of dysentery.*

Exhibited by Dr. A. J. Smith.

This specimen, the large and a portion of the small bowel, was removed about a week ago from a patient in Blockley Hospital. She was an old woman, æt. 70 years, who had suffered from marked symptoms of chronic interstitial nephritis, and the post-mortem finding verified the ante-mortem diagnosis. Some days before death she was taken suddenly ill with vomiting and purging, the latter soon taking on a hemorrhagic character. The attack appeared to be one of acute dysentery. At the post-mortem there was found a deposit of hemorrhagic membranous matter throughout the bowels. The upper portion of the ileum and the jejunum were inflamed and the seat of ecchymoses, and there was some formation of membranous material, but this was not so marked as in the lower bowel. The kidneys were full of small cysts containing clear serum. They are contracted, the cortex diminished, and the capsules strip off with difficulty, leaving a roughened surface; and are a typical illustration of the red granular kidney. *September* 25, 1890.

---

29. *Rupture of the stomach and fracture of the skull.*

Exhibited by Dr. H. F. Formad.

These two specimens are from the same individual. The first is of rather rare occurrence. It is a rupture of the stomach from a blow. The man, an Italian, had his stomach full of beverages and food, and got into a row at an Italian picnic and received a terrific blow in the stomach, I believe from a kick. The result was a rupture of the fundus of the stomach and rupture of the diaphragm of the corresponding side through which the stomach and its contents were forced into the left thoracic cavity, so that a large amount of alcoholic fluid and macaroni were found in the chest—an amount of material which one would scarcely imagine could be swallowed.

Not satisfied with hitting him in the stomach, the assailant took a large club of great weight and gave the man a blow upon the head. Here is the result—a fracture involving the whole left side of the skull, and a large fragment was forced into the brain. This was removed

by the surgeons at the Episcopal Hospital, and the man lived five or six hours. There was no laceration of the scalp. The surgeons simply made an incision and lifted this fragment of bone out. There was of course enormous extra-dural hemorrhage.

*September* 29, 1890.

---

30. *Duodenum from a case of burn.*

Exhibited by Dr. H. F. Formad.

This specimen is from a woman who received severe burns from a lighted lamp being thrown at her. She received severe burns all over the body and died five and a half hours later. The interesting point in this case, as in three others which I distinctly recall, is the pronounced congestion of the kidneys and the very marked congestion of the duodenum. Not only is there congestion, but also small hemorrhagic infarcts and small excoriations. The specimen does not show as well now as when fresh. The exact mechanism by which this takes place is an interesting subject for discussion. It is not a new subject, but no satisfactory explanation of its occurrence has been given.

I bring the specimen before you more to make it a matter of record that there is a duodenitis in burns of the skin. The duodenum shows spots of coagulation necrosis in various places. How this takes place in such a short time is hard to determine. There must be some nervous influence—a vasomotor change; it cannot be an embolic process. In one case where there were burns of the face and the inhalation of flames, it was quite pronounced. We do know that the branches of the sympathetic have a prominent distribution in the duodenum, and it is not unlikely that this system of innervation is in some way implicated in the process.

The kidneys in this, as in the other three cases which I have seen, have been markedly congested. The liver was normal, not even congested. The spleen showed nothing extraordinary. If anything, the other internal organs were anæmic.

Dr. F. H. Packard: I have nothing to say in regard to the duodenum, but from the appearance of these kidneys I judge that the urine must have been filled with various forms of organized deposit such as I have found in five cases of more or less general burns where I have examined the urine. Every one of these cases showed casts, mostly epi-

thelial casts. All showed red blood-corpuscles, casts, and renal epithelium. Some of them showed a great many leucocytes; some showed oil globules. I have not found any account of the examination of the urine in cases of general burns.

Dr. Allen J. Smith: I would suggest that possibly just as the urine is in abnormal condition, so there may be some abnormality of the bile giving it irritating properties to which may be due the duodenitis.

*October* 9, 1890.

---

31. *Dysenteric ulceration of the colon with perforation.*

Exhibited by Dr. J. Daland.

The patient from whom these specimens were removed was admitted to the University Hospital July 5th. He came from Norwood, and gave the following history: A German, æt. 36 years, a farm laborer by occupation; has always enjoyed good health. The family history reveals nothing of interest. On Saturday, June 28th, he ate considerable ice-cream and afterward drank largely of ice-water. To this he attributes his illness. On Sunday he had pain in the bowels and diarrhœa with six or eight stools in the twenty-four hours. He then got better, but July 1st he again drank ice-water and worked in the hot field. This was followed by a second attack. He then began to pass blood. The next day he continued to have diarrhœa with bloody stools. He grew worse steadily on the 3d and 4th and was admitted on the 5th, at which time he was very weak and had a furious diarrhœa amounting to thirty or forty stools in the day. Many of these contained blood and mucus. He also complained severely of tormina and tenesmus. A number of persons in the immediate locality from which he came suffered from the same condition, and many of them died.

The examination was made on the day following his admission. The pulse was fair. There was nothing abnormal about the heart. Examination of the lungs was made with negative results. The abdomen was somewhat retracted and painful on pressure. Hepatic dulness normal. Splenic dulness not increased. Urine negative. The patient remained in the hospital, and his course was somewhat variable. At first the stools continued at the rate of thirty, forty, forty-four, and on one occasion fifty, in the twenty-four hours. The general condition went from bad to worse. There was nothing special in the way of symptomatology, except the rapid loss of strength and flesh. He was able to take liquid

food and there was no vomiting. The fever was at first moderate, 101°. The pulse and respiration corresponded to this temperature. Later, the temperature fell to normal, and then it varied within one or two degrees of normal. For a few days it fluctuated between 97° and 102.° Treatment had no effect, and he died in a profound typhoid state with a retracted abdomen, with no special tenderness, and no history of acute pain. The abdomen was scaphoid.

At the autopsy the familiar lesions of dysentery were found, and much to the surprise of Dr. Smith, who made the post-mortem, and myself, a perforation was observed corresponding to the hepatic flexure of the colon. There was no evidence of peritonitis. Some of the intestinal contents had escaped into the peritoneal cavity. The tissues about the ulcer looked gangrenous. It looked as though the perforation had taken place just before death.

As to the treatment of the case, on admission the patient was placed at absolute rest and was given an absolute boiled-milk diet. He was given opium, in the form of the camphorated tincture, by the mouth in full doses, and enemas of one-fourth of a grain of nitrate of silver to an ounce of starch-water with ten drops of deodorized tincture of opium. This treatment producing no observable effect, it was subsequently changed to peptonized milk, and the injections were changed to boracic acid with opium associated. We observed no special effect from this. Later he was given bismuth in large doses, and during the entire treatment he took alcohol in varying amounts according to his condition.

I have nothing to add save to say that this epidemic or endemic of dysentery throughout Norwood appeared to be peculiarly fatal. The report was that a large number of the cases died, giving about the same symptoms as were presented by this case. It may be of interest to add that there developed in the hospital about this time a second case which ran identically the same course. The latter case was of especial interest because the man was suffering with caries at the time. We were not able to secure the specimens for demonstration.

A third case was brought to the hospital in a boy, æt. 12 years. This was of mild character and yielded promptly to treatment. The duration was not longer than three and a half weeks. I suppose that this case would be classified clinically as one of typhoid dysentery. From the beginning the typhoid state was marked and continued so until the end.

*October* 9, 1890.

## 32. *The morbid anatomy of typhoid fever.*

### The Annual Address by Dr. A. V. Meigs.

Mr. President and Gentlemen: Permit me in the first place to express to you my deep sense of the honor which has been conferred upon me by being selected to deliver the annual oration before you on this occasion.

The conception that I have formed of what such an address before a pathological society should be, is that it should embody the results of some original investigation, or if that be impossible, should suggest some line of thought in which it would seem that research might lead to something of value.

In casting about for a subject worthy of your attention, it occurred to me that a consideration of the lesions found after death from typhoid fever might be of interest. It is not that I have very much that is new to present to you upon this subject, for both in the general treatises and in the special works upon pathology will be found an immense fund of information in regard to the various morbid conditions of the tissues and organs in this complaint. Rather is it because in the course of my professional career I have been impressed with the fact that the view seems very common among physicians that typhoid fever is a disease of the intestines alone. Clinical experience as well as pathological investigations have lead me to look upon this view as an erroneous one. As I have studied the symptoms presented by my patients—epistaxis, an early symptom, often present before the abdominal conditions are pronounced, the hebetude or delirium, the subsultus, the eruption and sudamina, and the marked pulmonary conditions—I have been unable to rest contented with the view that the disease is seen in its true light when looked upon as primarily a disease of the intestines. Sometimes it has struck me that the reason the disease is commonly so considered, is because it is generally known among the laity as well as among professional men that it so often arises from drinking impure water, which is taken first into the alimentary canal, and from there starts upon its course of mischief. It would be as reasonable, however, that strychnine in poisonous doses produces death by its effects upon the alimentary system because it is taken by the mouth, as that typhoid fever is truly a disease of the same system; though in each the poison commonly enters by the same avenue.

The importance of conditions other than intestinal ones in typhoid fever first forced itself upon me, so far as my recollection serves, rather

from considering the disease clinically than from the grossness of the organic lesions. So much was this the case that two or three years ago I determined, as opportunities might arise, to make careful studies, both macroscopically and with the microscope, of as many of the organs and tissues as time and my ability enabled me to do.

It is the outcome of these investigations, as far as they have been made, that I want to present for your consideration. My results, of course, will be found to be far from perfect and there is room for further and almost unlimited study in the same line of thought, but so far as I shall make assertion of facts of observation I think you will find them to be true. When, however, I trespass into the fields of deduction you will, of course, do well to examine my logic and accept or deny my conclusions as the result may be.

With the object in view, then, of ascertaining whether other pathological changes besides the commonly recognized ones in the intestines and mesenteric glands might be present, and be present perhaps with a greater or less degree of constancy, I have made careful search in some of my cases. The picture I wish to place before you cannot, I think, be better presented than by reporting somewhat in detail a case that was studied at considerable length.

There was admitted to the Pennsylvania Hospital, August 18, 1889, a man, æt. 27 years, who was born in America. He belonged to the laboring class. He said that he had never suffered from any previous illness except an acute attack of some kind when seven years old. He denied having indulged in excesses of any sort. Six days before admission to the hospital he ate watermelon and the next day was taken with abdominal pain; soon diarrhœa with a sense of heaviness and weakness of the legs came on. The day before coming to the hospital he had epistaxis, but he continued to work until his admission, though his appetite was poor and he had continual abdominal pain. He had also some cough and expectoration.

On admission his temperature was $103\frac{3}{5}^{\circ}$ and there was some tendency to retention of the urine. The tongue was moist and coated with a white fur, but not tremulous. There was no eruption upon the abdomen.

Physical examination gave the following results: The first sound of the heart was soft (anæmic); the lungs were everywhere filled with bronchial râles; the hepatic dulness was of the natural extent, and the splenic dulness was somewhat increased. The treatment was four grains of quinine twice daily and ten drops of dilute muriatic acid three times daily. He continued to have fever, the temperature varying generally

between 101° and 104°, and after the first two days in the hospital he had diarrhœa, with from one to five stools in twenty-four hours. After a few days the tongue became dry and the pulse running, and there was much subsultus. The treatment was changed, turpentine and whiskey being given; still later, as he continued to grow worse, spirits of chloroform and tincture of digitalis were used. No characteristic eruption appeared, but he continued to fail, the temperature rose to 106° and he became excessively nervous and died, August 27th.

At the autopsy the following conditions were found. There were many pleural adhesions, especially to the diaphragm. The lungs appeared to be much congested, being intensely dark-red and in some areas almost black, and blood freely exuded on section. The heart looked natural except that it was soft and its lining was stained very dark-red. The liver was rather large and firm, but not very dark or much congested. The bile-duct was patulous. The spleen was three times the natural size, firm in texture and intensely dark-red on section. The kidneys were slightly enlarged, flaccid and dark colored on section. The small intestine throughout half its length presented many typical typhoid ulcerations of Peyer's patches, besides an unusually large number of smaller ulcers scattered generally over the inner surface. The mesenteric glands were enlarged to an unusual degree and on section some of them presented small spots of softening, the contents of which ran out, leaving cavities. The colon was congested but otherwise normal. The spinal cord presented congestion of the vessels upon its surface, especially of its lower half, where the veins were very full. The cord itself, both the surface and on section, looked natural.

Microscopical examination of sections cut from the lungs, heart, liver, spleen, kidney, ileum, mesenteric gland, and the spinal cord was made.

The most marked change presented by the lungs was that over large portions of the sections the appearance was simply that of a mass of blood. Large quantities of red corpuscles, exhibiting their characteristic outline and of a yellowish color, and unstained by carmine, with many leucocytes of varying size and appearance scattered amongst them, covered whole fields under the microscope. The blood filled the air-vesicles, bronchi, and bloodvessels, and in places there were evidences of inflammation, the tissue showing round-cell infiltration, and there being some catarrhal exudate cells. The bronchioles and tissue for a short distance around them were inflamed, the cells of the epithelial lining having undergone proliferation, and the subepithelial tissue being infiltrated, thickened, and containing vessels filled with clotted blood. The blood-clot in one vessel of the lung-tissue was variously channelled out,

new vessels being in process of formation in it, if they were not actually already formed. The heart-muscle was, in some places, in a very good state of preservation, the cross-striæ being very sharp. In other parts the fibres were homogeneous or granular-looking. It seems likely that this was due to disease and not to faulty technique, for all the tissue was preserved, prepared, stained, and mounted under precisely similar conditions, if not at the same time, and yet the same section often showed the most marked contrasts. It seems that there was some endocarditis, for the endocardium appeared to be slightly thickened, and contained more than the natural number of nuclei.

That some myocardial inflammation, independent of the state of the muscle-fibres, was present, there can be no doubt, for there was a great multiplication of the red-staining nuclei which are naturally present in the inter-muscular substance. In some areas there was a great deal of brown pigment in the muscle-fibres. Hemorrhage into the substance of the muscle appeared to have taken place at one area.

In the liver the separation of the lobules from one another showed so plainly that it recalled the appearance of the liver of the pig. This must have been due to the presence of almost structureless fibrous tissue or exudative matter between the lobules. In many places the trabeculæ could be seen, but the secreting cells had disappeared, as though by some cause the cells had been removed or destroyed, leaving the supporting framework *in situ*. In spots the tissue was broken down, looking as though the area would have been a minute abscess if life had continued longer.

The spleen was generally of a yellowish color when thin sections were examined, and the tissue did not stain well with carmine. The most marked feature was that instead of being composed of the usual small lymphoid cells, a large proportion was made up of cells of from three to five times the diameter of an ordinary lymph-cell. These in many instances were multi-nucleated and resembled more closely the large exudative cells so common in the lungs in inflammatory conditions than anything else.

The kidney tissue was disorganized, as is usual in persons dying of acute diseases in which the blood is broken down, the cells being swollen and granular and often loosened from their positions. A striking feature of the picture presented was that the Malpighian tufts were nearly bare, having shed much of their epithelium.

The ileum showed the ordinary conditions of infiltration and ulceration of Peyer's glands. There was thickening and some of the follicles had been shed, while others were in process of shedding. The thickened

portion of the lymphoid tissue was, as in the spleen, largely composed of multi-nucleated cells several times larger than ordinary lymph-cells.

The mesenteric gland that was examined was more than an inch in its longest diameter. The cavities which were mentioned as visible to the naked eye had no specially organized walls, there being at the periphery merely an area of active red-staining cells which shaded off into the rest of the tissue. At one area was a spot the cells of which had stained intensely red, gradually shading off to the color of the surrounding tissue; this must have been an early stage of the same condition which at a later period produced the cavities. These, it would seem, could be described only as abscesses. The condition of the cells composing the gland was parallel with that of those of the spleen and of the cells in the lymphoid portion of the ileum. Instead of being the ordinary small lymphoid cells, a great proportion of them were large multi-nucleated cells like those that were so abundant in the spleen.

The spinal cord presented appearances of which it is not easy to give an adequate description. That it was not healthy seems to be beyond doubt, and yet none of the changes were very gross. The postero-median (Goll's) columns in the cervical portion were in worse condition than any other portion of the tissue examined. With the naked eye it could be seen in the sections that this portion of the cord had been stained a deeper red than most of the tissue, and in it the nerve-fibres were not sharply outlined. The general impression was that there was too much neuroglia, which stained unduly red and seemed disposed to encroach upon the axis-cylinders. It appeared also as though the number of nuclei in the supporting tissue was increased. These appearances, of too much neuroglia, of being unusually red, and of the nerve-fibres not being as sharp in outline as natural, were present everywhere to a greater or less degree, but nowhere else to the same extent as in Goll's columns in the cervical portion. The central canal in the lumbar portion of the cord was quite widely open and the cells looked as though they had undergone proliferation. Sections were prepared from the cervical, dorsal, and lumbar regions, and were stained both with carmine and carminate of sodium, according to the method of Schultze.

This case exemplifies how extensive and grave may be the lesions in what was clinically an ordinary case of typhoid fever, in which all the usual symptoms were present except the rash. It would have been very easy for me in making the post-mortem examination to have stopped and remained satisfied after discovering the ulcerations in the ileum with enlargement of the mesenteric glands, and the usual so-called congestion of the lungs. This error I have often committed, and have

thereby, I doubt not, overlooked again and again lesions as important as those of which I have given an account.

For my own part, I cannot see that we have more reason to consider typhoid fever a disease of the intestines because there seems to be invariably present a lesion of the ileum, than we have to describe scarlet fever as a skin disease because one of its invariable manifestations is an eruption of the skin. Both are general diseases, and are more properly to be considered, in the present state of our understanding of such things, as due to derangement of function. Among my records I have the notes of two cases of undoubted typhoid fever: in both of them post-mortem examinations were made, and there was found no enlargement of the mesenteric glands, it being recorded that the largest gland was not more than a quarter of an inch in diameter.

My case as described directs attention to a number of lesions that I think are both common (if not invariably present) and very important in the disease. It would have been improper for me to come before you to relate an account of one case alone and then generalize therefrom if I had made no further investigations, and it is to be understood, therefore, that any deductions I may make are the result of study in a number of cases, though in no other one was the study so extensive as in the one detailed at length.

Disease, or at least disorder, of the lungs is known to be a common accompaniment of typhoid fever, but I do not think it is ordinarily, if ever, given the prominence that belongs to it. Murchison says that he noted bronchitis in twenty-one out of one hundred cases, and that it may be one of the earliest phenomena of the disease. He says further, that in a large proportion of the cases which terminate fatally within the first fourteen days death is due to bronchitis and hypostatic engorgement of the lungs. More commonly both these conditions supervene in the fourth week, and then they may lead to a fatal result. Of pneumonia, he says that he noted it in thirty out of one hundred cases.

In cases in which I have made microscopical study of the condition of the lungs—and this was typically represented in the case I have narrated in full—the appearances could hardly be classified as those either of pneumonia or bronchitis, as those terms are commonly accepted. The appearances were rather those of hemorrhage, for, as has been already stated, the air-vesicles, bronchi, and bloodvessels were filled with red corpuscles and leucocytes. In some of my specimens I have found air-vesicles filled with blood alternating with others containing fibrinous exudative material, and again catarrhal exudate cells. Commingled with these appearances were found those of inflammation of the lung-tissue—

round-celled infiltration—and there were also bronchi which were much inflamed. The impression left upon the mind by all this, however, was that an early lesion was the escape of blood from the vessels. The fact that organization and the formation of bloodvessels had taken place in the clots within the very bloodvessels themselves, is exceedingly interesting.

The soft heart of typhoid fever, originally described by Stokes,[1] is recognized by everyone as an almost essential feature of the disease, though its precise pathology is even yet not as thoroughly worked out as is desirable. The changes are most accurately and graphically described by Stokes, and so far as gross appearances are concerned, nothing has ever been added to our comprehension of the condition. Of course, so long ago no knowledge of the pathological histology was possible, for microscopical work was as yet of the crudest description. Stokes described what he saw as follows: "The heart is little, if at all, altered in volume. It is generally of a livid hue, but this it may have in common with other internal organs, as is often seen in fever. It feels extremely soft, especially in its left portion, and the left ventricle frequently pits on pressure. Nothing remarkable is to be found as to the pericardium or endocardium, and the valves are unaffected. The principal change is found in the muscular structure, which is often infiltrated with an adhesive, as it were, gummy secretion. The left ventricle exhibits a singular appearance, for the traces of the muscular fibres are lost, and the external layer to the depth of an eighth of an inch converted into a homogeneous structure, in which no fibre can be found. The color of this altered portion is generally dark, and it resembles the cortical structure of the kidney. In some cases this change occurs in patches varying in depth, and from a quarter to three-quarters of an inch in breadth."

This description leaves nothing to be desired so far as the macroscopical appearances are concerned. The histological changes, as I have seen them, are disorganization of the muscle-fibres, which are either granular in structure and contain much brown pigment, or are homogeneous; great increase of the inter-muscular nuclei, and sometimes hemorrhage into the tissue. These changes vary to almost any extent in different cases, healthy tissue alternating through the organ with diseased areas.

[1] It must be remembered that at the time Stokes made his observations the distinction between typhus and typhoid fever was not yet made. This is evident from what he says in discussing the lesions in his book upon Diseases of the Heart and Aorta: "As to the intestines, we sometimes found ulcerations of the ileum, while in other cases no such lesion existed."

The alterations of structure are probably not inherently irreparable, nature being capable under favorable circumstances of replacing the diseased by sound tissue. The result, therefore, the life or death of the patient, must depend, so far as the heart is concerned, upon the extent and situation of the change—complete recovery taking place in cases in which the disease has not progressed too far. The great increase of nuclei in the inter-muscular tissue is a strange phenomenon, and, in the present state of knowledge, somewhat inexplicable. It must be due to cell-multiplication either in the connective tissue or of the vascular tissue, the capillaries of the heart being always very rich in nuclei. Hemorrhage into the tissue of the heart must have a most disastrous effect upon its functional activity.

The condition of the liver in some of the cases that I have seen was peculiar. The lobules were much more distinctly outlined than in the healthy state, and some evidences of degeneration and inflammatory action were present. In the *Transactions of the Pathological Society of London*, 1889, there is an article by H. Handford on "Hepatitis in Enteric Fever," in which he says: "But the most characteristic change, though so far as I have observed not quite a constant one, is the presence of small rounded areas that stain imperfectly, that are infiltrated more or less thickly with leucocytes, and that are surrounded by a dense ring of cellular infiltration. . . . In other similar patches, which I take to be in a more advanced stage, the liver cells cannot be distinguished at all. . . . In yet a third variety there exist simply rounded aggregations of leucocytes, the smaller patches hardly distinguishable from commencing miliary tubercles, and the larger ones from the early stages of miliary abscesses." Accompanying the paper is a plate graphically representing the appearances, and both it and the description as quoted tally closely with what I myself have observed.

The spleen, everyone knows, is almost always enlarged in typhoid fever. The only thing that has struck me as at all peculiar in making microscopical examinations of that organ in typhoid fever is the appearance of the cells which I have mentioned in the description of a case, very large multi-nucleated cells constituting a large part of the organ. Cells of like appearance, as has already been mentioned, are very abundant in the mesenteric glands and in the glandular tissues of the ileum.

The kidney does not seem to take on any special characteristics, presenting merely the appearance commonly termed cloudy swelling, and in the few cases in which I have made examinations the capillary loops of the glomeruli being to a considerable extent bared of epithelium.

The cavities, seemingly abscesses, in the mesenteric glands show how great was the destruction in these tissues,

Microscopical study of the condition of the spinal cord in typhoid fever does not seem, heretofore, to have been pursued to a great extent. Of late years, too, improvements in microscopical technique render possible a much more accurate and satisfactory examination of delicate tissues like the cord than was previously possible. That there was considerable disorganization of the tissue in the case described is beyond doubt, and it presented itself in its highest degree in the postero-median columns in the cervical portion of the cord.

It is interesting to contemplate and to reflect upon one phenomenon presented in the disease, namely, the tendency of the blood to escape from the vessels in so many parts of the body. Hemorrhage into a tissue, though not necessarily destructive, is always to a greater or less degree injurious, and in typhoid fever it is common from the nose and from the ulcers in the intestines, into the lungs, and sometimes into the substance of the heart. The condition, too, of the spleen and mesenteric glands would seem to present something analogous to hemorrhage, for they are much enlarged and engorged with blood, but the nature of lymph-gland tissue is such that with present methods of microscopical examination it is not possible to be absolutely certain whether there is any escape of blood from the vessels or whether it is still retained within their walls. The abundant presence of red blood-corpuscles in such tissues is, of course, perfectly patent to anyone who has ever examined them with the microscope.

The amount of red blood-corpuscles that commonly lie in the pulmonary alveoli after death from typhoid fever, and the way that they alternate with areas presenting the appearance of pneumonic inflammation and exudation, how the hemorrhage occurred and what changes it may undergo, have seemed to me questions of the greatest interest. This question of hemorrhage into the lung in typhoid fever, if not actually new, is, I think, capable of being presented in a somewhat new aspect. Every clinician knows how common a symptom in typhoid fever bloody expectoration is. The importance of the condition of the lungs and the frequency with which they are involved is the turning-point upon which will rest the question of death or recovery—a matter which can hardly be given too great prominence. It is from the consideration of these turning-points in acute diseases, I think, that most can be done for the science of therapeutics.

The common practice in typhoid fever is to direct our therapeutic measures toward what is called the antiseptic method, toward the old

expectant plan, or almost alone toward feeding, and again another physician will place his chief reliance upon the supporting effect of stimulants. This may be well enough in most cases, but I am quite convinced that, often, careful observation of the lungs and watchfulness to foresee the advent of more serious lung involvement, and well-directed efforts made to bring about a cure through therapeutic measures applied to the lungs, will conduce very greatly toward reducing the mortality record from the disease. By constantly keeping in mind the fact that the lung condition is of the greatest importance, and by wisely changing our course of management and medication when we see that these organs are about to become involved, or that their condition is likely to become worse, even to the extent of neglecting or setting aside all other treatment and directing our attention to the lungs alone, cases may be saved which would otherwise be lost. This, at least, is my impression, after a good deal of experience with the disease.

My object to-night has been not to make a pretence that I had a finished treatise upon the morbid anatomy of typhoid fever to lay before you, but rather to call your attention to such points of interest as, in my experience in the therapeutic management and pathological study of the disease, have come directly to my knowledge. For the disease is one which is so common that all physicians, whether they practise medicine or study pathology alone, are constantly called upon to deal with and to consider in its various aspects.

For my own part, I look upon it as a general condition, to be classed rather with diseases like smallpox or scarlet fever, which seem from their earliest stages to take hold of a large part of the system, though they have an invariable local manifestation, than with pneumonia, which begins locally in the lungs, and then by secondary involvement may invade other parts of the system to almost any extent. I am entirely unable, however the poison may have originally found entrance to the system, to see the reason for considering it to be truly a disease of the intestines. In many cases that I have attended there have never been, from beginning to end, any abdominal symptoms—no diarrhœa, no abdominal pain, no gurgling, no tympany; I have notes of cases in which, even from the beginning of the attack to the end in death, there was no loss of appetite. On the other hand, we all have frequently seen cases in which life was threatened or death occurred as a consequence of involvement of some other part of the system—the abdominal symptoms being, if not absent, at least so latent as to allow us to be quite sure that the threatened danger did not come from that quarter.

To show that I am not alone in such views as I have enunciated I

will quote from an essay which seems to me a most admirable and suggestive one. In the Lumleian Lectures on Enteric Fever, by John Harley (*Lancet*, April 13, 1889), after discussing various *pros* and *cons* concerning the etiology of the disease, Harley makes the following statement: "From the foregoing considerations, I think it unreasonable to assent to the germ-theory of disease, and I can only regard it as another of the many instances in medicine and out of it where cause and effect have not been discriminated. Setting aside, therefore, this theory, I shall endeavor to prove that the disease under consideration is merely the effect of derangement of function." There is much more that is of interest in the essay, especially that it becomes evident as he unfolds his views that he tends to believe that typhoid fever may arise *de novo*. The germ-theory is, of course, the outcome and ultimate conclusion of the belief that the disease is local in the intestine.

There is another matter which I think is seldom given due weight in determining our prognosis in typhoid fever—the degree of our bodily perfection at the time we are attacked by any acute disease must largely influence our chances of recovery, and the degree to which our bodies are imperfect must render us more liable to disease. Does it not often happen that those who die of acute diseases had already in them some imperfection which took away the power to resist the depressing action of the acute process? Each attack from which we suffer and during which inflammatory processes take hold of any part of our tissues must leave us with a permanent mark—an imperfection—of greater or less degree. This thought is a very suggestive one, and one which might perhaps be pursued with advantage to much greater length. In all cases of typhoid fever, therefore, we should, when dealing with them from the clinical standpoint, carefully try to ascertain if there was any preëxisting bodily imperfection which should make the prognosis more serious, and at our post-mortem examinations should seek equally carefully for the presence of lesions which were already present in the body before the attack came on.

Finally, let me recapitulate some of the points that it has been my desire to dwell upon and to elucidate:

1. The disease is in my estimation a general one, involving a large part of the system, and in no way a local disease of the intestine. This belief is supported by the many and extensive organic lesions found in the body after death; and thus it would seem likely that Harley is right in his statement that the disease is due in the first place to derangements of function, and in rejecting the germ-theory of its origin.

2. The frequency of hemorrhages in various parts of the body and

their importance I have dwelt upon, and I wish to repeat my belief that hemorrhage into the substance of the lung is most common. This latter, if not a new observation, is a fact certainly not commonly known.

3. The observation that the spleen, mesenteric glands, and lymphoid tissue of the ileum are made up to a great extent of large multi-nucleated cells instead of the ordinary small lymphoid elements is a curious and interesting one and requires further study; such study may possibly lead in the future to something which may have practical value.

4. Careful microscopical study of the condition of the spinal cord in the disease is much to be desired.

5. The attempt is made to show the need of a careful consideration of the previous condition of bodily perfection of persons attacked by the disease as having an important bearing upon prognosis.

6. We should be influenced in our treatment of typhoid fever to a great degree by the manner in which it takes violent hold of this or that portion of the organism. Our therapeutic efforts will be much more likely to be crowned with success by a careful consideration of this matter.

In conclusion, I repeat that my wish has been to make my essay suggestive rather than final, to point to threads which if followed to their endings may lead to an advancement of our knowledge of the pathological anatomy of typhoid fever, for such an advance will surely lead us in the future to a better treatment, if not to that which would be best of all, the prevention of the disease.

Dr. Tyson said: The changes to which the speaker has referred in connection with the cord are of extreme interest, but it remains to be seen whether or not these are necessary accompaniments of typhoid fever, or whether they may not be present in other forms of disease, associated with as prominent febrile symptoms.

He was somewhat disappointed that in the paper no reference had been made to the "bacillus of typhoid fever," found in the splenic and certain other tissues; since, whether it stands in a causal relation or not, it is of extreme interest in view of the studies of Koch, Klebs, Eppinger, and others.

He thought, too, that Dr. Meigs scarcely does the profession justice when he says that it regards typhoid fever as a local intestinal disease rather than a general one.

The speaker further stated his growing acceptance of the germ-theory of etiology in a wider and wider field, and observed that he has come to look readily and favorably upon bacterial causation for a large number of diseases.

Dr. J. C. Wilson: I also wish to protest against the statement which

Dr. Meigs has made that the medical profession of this city regard typhoid fever as a local intestinal disease. If this opinion is entertained at all, it must be confined within narrow limits. The teachings of the schools and the tendency among practitioners has, so far as my knowledge extends, been, without exception, that the disease is a constitutional affection with local manifestations, among which are those of the lymph-glands of the intestines. The common occurrence of definite prodromes, the epistaxis, the bronchitis frequently observed in the early stages, the enlargement of the spleen, the broncho-pneumonia of the later stages, the course of the fever itself, the nervous phenomena, all go to show that the disease is a profound general constitutional disturbance implicating the structures of the body far and wide from the earliest period of the affection.

Dr. J. H. Musser remarked on the difficulties of distinguishing by histological examination changes due to the specific process, the typhoid process, changes due to high temperature. He also called attention to the importance of employing modern methods of research to the study of the fevers—that is, transferring our studies to the laboratory and the field of experimental pathology. He instanced the study of tuberculosis. Clinical research and histological examination had been exhausted long before the time of Koch; but since his methods have been employed with laboratory study and experimental work, our knowledge of tuberculosis has been revolutionized. By such labors alone can we solve the etiological and histological problems of the specific fevers.

In answer to inquiries made by Drs. Hare (as to the cause of the hemorrhages into the tissues), Coplin (as to the existence of any constant lesions in the cerebral type of the disease), and Hatch (as to the anatomical appearance of the ulcerations in the intestine), Dr. Meigs said that he was sorry if he had misstated the position of the profession as to the essential character of the disease. As to the possibility of a germ origin, he had taken no stand in any way. With regard to the hemorrhages, there is no knowledge as to their manner of production, and their existence can be simply stated. From the character of the blood as found he would look upon it as probably an occurrence of the early stages of the disease, and does not think that the term "hypostatic congestion" as ordinarily understood can apply to the condition of the lung tissue in these circumstances.

He has never had the opportunity of examining into the causes of the manifestations of the "cerebral type."

The ulcers of typhoid fever are for anatomical reasons usually elongated in the direction of the long axis of the Peyer's patches, but he

has occasionally seen small round ulcers involving only one end of the patches; these latter would, however, have become elongated and involved the entire patch had the patient lived long enough. The non-ulcerated portion of the patch then usually showed a "shaven beard" appearance. Ulcers extending around the gut are usually tubercular.

*October* 23, 1890.

---

33. *Case of acute opium poisoning; dilated stomach; biliary calculi.*

Exhibited by Dr. J. Leidy, Jr.

The specimen presented is shown to the Society through the kindness of Dr. Formad, the coroner's physician.

The patient was admitted to the wards of the Pennsylvania Hospital in a condition of acute opium poisoning. The woman was not addicted to the use of opiates, and had taken the drug with a suicidal effort. Before her removal to the hospital a physician was called in; he attempted to wash out the stomach, but after the injection of considerable fluid there did not occur any regurgitation. On her admission to the wards, Dr. Scott employed a stomach-tube, but did not succeed in obtaining fluid from the viscus. The patient at this time was in a comatose condition, with but four or five respiratory movements a minute, and with other well-marked symptoms of opium poisoning. Under treatment she improved until in the early portion of the evening, becoming perfectly conscious, with pulse, temperature, and respiration normal. About nine o'clock in the evening she began to complain of severe pains in the right iliac region, and these became more and more pronounced. Fearing lest this symptom was due to a possible rupture of the stomach or œsophagus from the use of the stomach-tubes, and the failure to obtain fluid from the stomach suggesting the same possibility, together with the presence of indistinct signs pointing to the presence of fluid in the peritoneal sac, an exploratory incision into the abdomen was determined upon by the consent of the patient. Dr. J. H. Packard performed the operation. No appearances of peritonitis were found, nor was there any fluid in the cavity. Upon examining the gall-bladder, two stones were found within the bladder, and one firmly impacted in the cystic duct. Because of the firmness of the impaction, and because of the existence of numerous adhesions about the gall-bladder, it was thought best not to interfere, and the abdominal wound was closed. The

patient recovered from the shock of the operation, but died at 9 P. M. Sunday.

On post-mortem examination the specimen presented to the Society was removed, the stomach and part of the duodenum, with the liver and gall-bladder and ducts. The stomach is enormously dilated at the cardiac extremity; but there is no laceration of any of the coats, and the dilatation is probably a congenital one. The contents of the stomach were strongly tinged with bile, and there was bile in the duodenum. The rest of the intestines were normal; the appendix showed nothing unusual. The kidneys were normal. The lungs were in a state of hypostatic congestion posteriorly. Examining the biliary apparatus, the common and hepatic ducts are patulous and apparently normal, but the cystic duct does not permit the passage of a probe into the bladder because of the total occlusion of the lumen by a small calculus. The fundus of the bladder is very much thickened and adherent to the liver, suggesting malignant disease. Within the cavity of the bladder there were two other biliary calculi. No peritonitis.

There was no jaundice in this patient, and nothing pointing to the existence of gall-stones was elicited from the history given. After death, however, an indefinite history of recurrent attacks of pain was obtained from the family. *November* 13, 1890.

---

### 34. *Perforated appendix.*

Exhibited by Dr. A. J. Downes.

The specimen I exhibit is the distal half of the vermiform appendix of a feeble lady, æt. 64 years, from whom I removed it this morning. It shows a perforation with an exudate surrounding, made of a substance similar to what I show you, which escaped from the abdomen on incision over the cæcum. I might call it partly organized lymph, but it is very much like colloid matter. The history of the case is briefly this: On October 15th I first saw the patient; she was suffering from flatulence and colicky pains, on the right side especially.

Pain became very intense in a few days; the abdomen became greatly distended, and the temperature rose to 103°, and continued so for a week. Over the cæcum there developed a circumscribed doughy feeling. Treatment, consisting essentially of salines, relieved the condition, the swelling

and pain gradually disappeared, and in two weeks she was able to leave her bed, and I ceased visiting her.

On November 10th I was called again. A similar attack soon developed. The distended abdomen and other signs of peritonitis developed. The swelling over the cæcum was greater and more painful. The patient was too feeble to stand succeeding attacks, and I advised operation, explaining the reasons and indications. She wanted relief, and accepted. In operating I found the left lobe of the liver enlarged and mottled, but am not prepared to say it is malignant. The case is an unusual one in the fact that the second attack was an aseptic one, my explanation being that this exudate enveloped the perforated appendix, and protected the abdominal cavity and prevented absorption and sepsis. The first attack was septic. Fully a gill of this material (colloid ?) escaped on incising the abdomen.

Note.—The patient made a good recovery, with relief from all symptoms. She was out of bed in seventeen days, free from pain; suffers as before operation from her age only. No signs of liver trouble.

*November* 13, 1890.

---

### 35. *Meningitis and carcinoma of stomach.*

Exhibited by Dr. M. H. Fussell.

The subject from which this specimen was removed, a man, æt. 80 years, had both legs amputated below the knees about forty years ago. I was called to see him on the 18th of August, 1890. He had been subject to fits of spasmodic asthma, but had otherwise been in good health until about six months before my visit. His trouble began with simple loss of power and strength, with occasional attacks of pain in the epigastrium. There was at no time any vomiting, nor had the pain been very severe, the loss of strength being the only thing complained of.

On the occasion of my second visit he complained of loss of power in his right arm. This loss of power gradually increased until he developed a complete monoplegia of the right arm. There was at times double vision and some dizziness. On the 22d of August was noted a slight drooping of the left eyelid. On the 29th the patient's mental condition was dull; his speech was thick and there was complete loss of power in the right arm.

The iris at all times responded to light. On the 3d of September the

right arm had improved somewhat. His mental power gradually failed and he became entirely unconscious, lying in a stupor most of the time, but able to swallow on being aroused. His flesh and strength rapidly failed. He now developed for the first time numerous attacks of vomiting, at times vomiting blood and "coffee-ground" material. Careful examination of the abdomen failed to confirm the suspicion of carcinoma.

The patient died in September, 1890.

Examination of the body twenty-four hours after death developed the following conditions:

*Brain:* The dura mater was apparently normal. The pia and arachnoid on the vault of both hemispheres were greatly thickened (one-eighth of an inch in thickness), opaque, and œdematous. It was adherent to one of the frontal convolutions on the left hemisphere near the longitudinal fissure. Otherwise the brain and membranes were normal.

*Chest:* Normal.

*Abdomen:* At the pyloric end of the stomach was a small typical carcinomatous ulcer entirely surrounding the ring. This was doubtless the cause of the hæmatemesis during the last few days of life. All of the other abdominal organs were normal; no induration in any part.

It is needless to say that a diagnosis of carcinoma was not positively made during life.

The ulcer here shown had given rise to enough induration to cause a palpable tumor.

All the symptoms except the bloody vomiting could be accounted for by the very evident brain lesion. *December* 11, 1890.

---

36. *Cancer of œsophagus; gastrostomy.*

Exhibited by Dr. J. B. Deaver.

This specimen was removed from the body of a patient dead from cancer of the œsophagus, for the amelioration of which condition he had performed the operation of gastrostomy. The patient was a woman past middle life, of rather full habit, in whom there developed without specific history an impassable stricture of the œsophagus, which, from the presence of excessive pain, the age of the patient, and the absence of traumatic cause, was diagnosed as cancerous. Rectal alimentation was

in this case impossible because of the irritability of the rectum and the refusal to retain food. The patient died suddenly from a rupture of the œsophagus immediately above the stricture.

The patient being fed with the greatest difficulty and gradually failing, it was determined to perform the operation of gastrostomy, and to attempt to feed through an artificial opening into the stomach. This was done some six weeks before the death of the patient. The primary operation consisted in the opening of the abdominal cavity in the line of the middle of the left rectus muscle, through which the stomach was easily grasped and stitched into the opening of the abdominal wall; and after a few days, when there were adhesions between the stomach wall and the wall of the abdomen, the stomach was opened and a rubber catheter inserted, through which the patient was fed for three weeks. After this a silver canula with a broad abdominal plate was provided and used for introduction of the food into the stomach until the time of death.

As to the proper position for the primary incision some authorities give the best line as along the costal border of the left side, but the incision practised in this instance through the left rectus muscle permitted an easy and ready access to the stomach, and in no way was the operation to be regarded as a difficult one. As to the time best suited for operation, it seems to be well understood among surgeons that any operation should be done before the stricture of the œsophagus has entirely closed.

The specimen in this case consisted of the portion of the abdominal wall, including the fistula into the stomach cavity and the stomach attached to the serous surface of the abdominal wall. Between these there was excellent adhesion and uniform attachment; the opening of the fistula externally was marked by a small teat-like projection of mucous membrane and a certain amount of granulation tissue. The surface in the immediate neighborhood of this opening was in an excoriated condition, but not otherwise abnormal. The stomach mucous surface was normal except in the neighborhood of the opening, where it was slightly hyperæmic and inflamed.

Dr. Hearn: I have not done the operation and have not had any experience as to the ease of its performance; but I have seen an attempt to perform the measure result in the stitching fast and, later, opening of the transverse colon instead of the stomach, as was intended.

Dr. T. R. Neilson: I was present when Dr. Deaver performed the operation of gastrorrhaphy upon this patient, and can bear witness to the ease and rapidity with which he exposed the stomach and made it fast

to the edges of the wound. There should not usually be any great difficulty in the procedure, unless the stomach is much contracted. If the anatomical relations of the stomach and the transverse colon are borne in mind, and the incision through the abdominal walls is made sufficiently long to give room for a certain amount of exploration, there should be little difficulty in recognizing the stomach above and the transverse colon below, with the gastro-colic omentum between and joining them. Dr. Deaver's patient had a very fat abdominal wall, and the wound was consequently a deep one, but in spite of this fact the identification of the stomach was the work of but a moment.

*December* 11, 1890.

---

### 37. *Case of abscess of the Liver.*

Exhibited by Dr. H. M. Fisher.

Adam R., æt. 34 years, single, born in Germany, a farm hand, was admitted to the Episcopal Hospital, under Dr. Caspar Morris's care, August 9, 1890. Present illness began with an attack of dysentery one year ago last May. He has had since then much pain over the hepatic region, lancinating in character. During this summer he appeared to have suffered from irregular chills, fever, and night-sweats. About one year before admission œdema of the feet and legs set in.

Upon admission patient was very thin and presented a peculiar, sallow, "earthy" appearance; the conjunctivæ presented a faint yellowish tinge. Lancinating pains still complained of.

Examination of heart and lungs negative. Abdomen slightly bulging in right hypochondrium, and there was marked tenderness to the touch over the whole hepatic region. Liver dulness extends five and three-quarters inches in the axillary line; in the median line, two and a half inches, and in the nipple line about eight inches. Abscess of the liver suspected, but fluctuation cannot be detected.

*October* 11. Complains of intense pain in the sixth right interspace, which came on suddenly yesterday afternoon and prevented him from sleeping, and of pricking sensations over the epigastrium and right hypochondrium.

14*th*. Intense pain in the tenth interspace in axillary line—much aggravated by pressure. Urine non-albuminous, but with tannic acid test shows distinct ring of peptones.

24*th*. Spleen enlarged, measuring six inches vertically and about four inches transversely.

Posterior liver dulness now measured seven inches, and anterior dulness extends almost to the umbilicus. Complains of great pain in the left lumbar region, near the sternal extremity of the twelfth rib.

*November* 23. Diarrhœa and stools contain mucus and some blood, but checked by starch-water and laudanum enemata. Pulse irregular and intermittent. Red blood-corpuscles about 3,262,000 to the c.mm. White corpuscles apparently not in excess of normal.

*December* 1. Has had a slight cough, attended with expectoration of mucus.

6*th*. Cough increased; free expectoration of brownish sputa. Punctured lower part of chest with hypodermic needle and drew off some purulent matter, which was examined for tubercle bacilli, but none were found.

12*th*. Expectorated about eight ounces of greenish-brown matter. Diarrhœa continues; very weak; pulse intermittent; complete anorexia.

16*th*. Died this evening. The free expectoration continued till death.

*Autopsy*.—Body extremely emaciated. Skin of the face and hands stained of a dirty-yellow color. *Liver* very large, extending below the umbilicus, and posteriorly and to the right it was firmly bound down to the diaphragm by adhesions. The *right lung* was bound down to the lower part of thoracic cavity and to the diaphragm by firm adhesions, and in trying to break them away a large abscess cavity was opened in the upper posterior portion of the right lobe of the liver which was found to contain about a quart of foul-smelling pus. The walls of this cavity were thickened by false membranes which were for the most part rough and friable, but in places a smoother, reddish-yellow false membrane appeared. A fistulous communication was discovered passing from the abscess cavity through the diaphragm into one of the smaller bronchi. On cutting the trachea, about one drachm of pus escaped. The lungs were somewhat congested and emphysematous, but were otherwise normal.

The *spleen* weighed 12½ ounces, was very dark and glistening in appearance, and irregularly lobulated.

The *right kidney* was firmly attached to the lower border of the liver by false membranes. It appeared to be somewhat fatty.

The *heart* was somewhat dilated. The right auricle contained a large currant-jelly clot. The left ventricle was dilated and contained a large clot. The lower part of the large intestine showed numerous ulcerations. *January* 8, 1891.

### 38. *Cancer of liver and pancreas.*

Exhibited by Dr. J. L. Hatch.

Dr. J. L. Hatch presented specimens of cancer of liver and pancreas, and a cholesteatoma, taken from a patient in the Philadelphia Hospital, upon whom there had been performed, three and a half years ago, an operation for the removal of a cancerous right breast. The body was that of a white woman past middle life, a patient of the insane department, with a clinical diagnosis of delusional insanity.

At the autopsy the scar of the old operation was distinctly visible upon the right breast. Upon opening the thoracic cavity the pleural sacs were found full of fluid and on both sides irregularly adherent, and over the surface there were small whitish deposits looking somewhat like tubercles, but on section firm and not caseated—the pleural tissue about these deposits being slightly elevated and looking like scars. Beneath the visceral pericardium in the wall of the left ventricle immediately below the origin of the aorta there was a rounded, yellowish mass about three-eighths of an inch in diameter, and on section similar deposits were found in the body of the heart. The liver presented before the Society was considerably enlarged and the seat of numerous round, white encapsulated growths, varying from one-eighth to one and a half inches in diameter. The pancreas showed marked cancerous invasion of a secondary nature. The mesenteric glands were much enlarged; and secondary tumor deposits were present in the mesentery along the course of the bloodvessels. The uterus was the seat of intra-mural fibroid growths, and there was one suspicious mass on the subperitoneal surface which on section presented two nuclei, one apparently fibrous and the other looking to the naked eye somewhat cancerous. None of the other organs were involved in the tumor invasion, except that in the brain, which was of fair size and with well-marked convolutions, the dural membrane was the seat of a growth on the under surface which upon microscopical examination proved to be a cholesteatoma, a tumor having the general features of a sarcoma. The special features in the case are the widespread character of the cancerous invasion, which is apparently the result of metastasis from a mammary cancer of long growth and the multiplicity of forms of the neoplasms occurring in the single individual.

Dr. Joseph Price: While this case of Dr. Hatch's does present a wide distribution and a rather mixed nature of tumor formation, I have seen

and operated upon a woman, now living and well, in St. Louis, removing both breasts for cancerous disease about three years ago, and since then a large cystoma of one of the ovaries. At the time of the removal of the ovarian tumor the uterus was found to be the seat of such marked fibromatous invasion that it was deemed best to remove the other ovary as well, which was therefore done. In pelvic tumors this mixed occurrence is rather common, cystomata (cysto-adenomata), fibroids, and dermoids not infrequently being found all present in the same patient.

*January* 8, 1891.

---

### 39. *Umbilical hernia.*

Exhibited by Dr. H. F. Formad.

Dr. H. F. Formad presented the sac of an enormous umbilical hernia with the surrounding tissues and dermal covering and the contained viscera. The hernial sac in this case was large enough to accommodate all the abdominal contents except the stomach and rectum and the solid abdominal viscera, liver, kidneys, etc.

This case occurred in the practice of Dr. Charlton, of this city. The patient, Mrs. Elizabeth F., æt. 49½ years, was a strong, healthy girl until in her sixteenth year. At this age she fell down stairs and struck her abdomen against a tub; and it is stated that she "felt something give way in her stomach." Then a small umbilical hernia about the size of a pea appeared. She suffered no pain at the time and paid no attention to it. It slowly increased in size, and at the time of her marriage in 1873 it was as large as an English walnut. She was then thirty-two years of age, and as yet the hernia had not troubled her. One year after her marriage she became pregnant with her first child. After her confinement the tumor enlarged rapidly until it reached its present size twelve years ago, after the birth of her third and last child. Seven years ago she fell on the ice and injured the tumor; an ulceration appeared on the top of it, and this never healed. Her bowels were opened daily, and she seldom took purgatives. She always performed her own house-work, even doing the family washing. On December 29, 1890, she stood in the line of the tax-payers at the City Hall for four hours, when she came home complaining of great pain in the abdomen and took a dose of castor oil. This failed to operate, and she took two more doses of the oil and a bottle of citrate of magnesia without the desired

effect. When Dr. Charlton was called on January 2, 1891, the patient was delirious, pulseless; her bowels had not been opened for five days, and she died the following morning. Her husband stated that during life she complained very little of pain, and seemed to suffer more from the weight of the tumor than anything else. She never wore a truss or bandage of any kind.

From the same case Dr. Formad showed the gall-bladder, enormously dilated and containing a number of gall-stones—two enormous ones and about fifty small ones. The viscus was dilated to about five or six times its normal dimensions, and contained besides the biliary calculi a clear, viscid fluid. There is nothing in the history of the case bearing upon the presence of these gall-stones. The substance of the liver was not pathological to casual observation.

Dr. A. V. Meigs called attention in speaking of the case of umbilical hernia to the suggestion offered by the specimen as to the reversion of type which is seen often in disease. It is to be recalled that in embryonal life the intestines are naturally found outside of the body cavity and in the condition of umbilical hernia, the vitelline duct communicating between the intestinal sac and the body cavity.

Dr. C. W. Burr: I am unable to say anything as to the origin or pathology of these cases of umbilical hernia, but I desire to mention the present existence in Philadelphia of a woman with an umbilical hernia of about the size of the one presented by Dr. Formad containing, as far as can be told in life, all the intestines as in the present case. I should like to inquire of Dr. Formad the cause of death in this instance.

Dr. Formad: I am hardly prepared to say. There were extreme catarrhal changes in the intestines, and the woman had suffered from diarrhœa shortly before her death; she was an old woman; I was not permitted to open the brain; the heart was rather weak and dilated, but there were no valvular lesions; the kidneys were contracted; the blood was fluid, and the death occurred suddenly. *January* 22, 1891.

---

### 40. *Hepatic abscess.*

Exhibited by Dr. L. Wolff.

Dr. L. Wolff presented a moderate-sized liver, showing considerable pigmentation and the remnants of a large abscess in the right lobe. The specimen was removed from the body of a woman, æt. 28 years (Mrs.

C. K.). No previous history of the case is known except that her attending physician had stated that she had malignant disease of the liver. She was brought to the German Hospital in the ambulance and died within five hours after admission. She was very much emaciated, and complained of severe pain in the region of the liver. She was suffering from a cough, and at first it seemed as though she were in an advanced phthisical state; but her moribund condition prevented careful examination.

At the autopsy the peritoneal cavity was found partly filled with foul, stinking pus and shreds of necrotic tissue resulting from the rupture of a large abscess of the liver, involving almost half of the bulk of the organ. The lower bowel was found in a dysenteric condition, the mucous membrane thickened and inflamed, and there were several small ulcers in the rectum. There were evidences of phthisis in both lungs in the shape of small consolidated areas, but there were no cavities. The other viscera were normal.

The President called attention to an uncommon feature of this specimen in the multi-locular character of the abscess, the right lobe being in a sort of honeycombed condition. *January* 22, 1891.

---

### 41. *Plastic peritonitis.*

Exhibited by Dr. L. Wolff.

This specimen was removed from the abdomen of a former patient in the German Hospital, filling the entire cavity. The mass was found to be composed of dense fibrous tissue, in which were matted the intestines, liver, and other abdominal viscera, the whole mass having the appearance of an enormous fibroma traversed by the intestinal canal. The following notes were made in the hospital: A. D., male, æt. 39 years, white, born in Germany, single, weight 116.5 pounds, a pipe-smoker by occupation. The patient was not addicted to alcohol; had no specific history and had never been seriously ill before the present trouble. In July of 1889 he suffered from a series of attacks of pain in the abdomen, accompanied with diarrhœa, each one lasting a few days. In the intervals he felt perfectly well. In April of 1890 there occurred an attack of vomiting serious enough to compel him to relinquish his work. There was considerable pain in the abdomen, and marked increase in the size of the abdomen was noted. There was no tenderness,

but pressure did not relieve the pain. He remained in bed for one month, losing in that time twenty-five pounds in weight. He then returned to work, the abdomen having again resumed its natural size; but a distinct tumor hardness remained upon the right side. The attacks of pain, vomiting, and diarrhœa continued, and he entered the German Hospital in last August in order to be operated upon. The surgeon on duty diagnosed a retro-peritoneal sarcoma, and believing an operation hopeless, refused. The patient returned to work, but the attacks of vomiting and pain became more frequent, he continued to lose flesh, and was finally re-admitted September 22, 1890, in a moribund condition. At this time the man was anæmic, but fairly nourished. He complained of a pain of a burning character in the throat, an ever present inclination to vomit, and a frequent desire for stool. He was very feeble, and was unable to stand erect. The tongue was slightly coated; respiratory system normal; heart-sounds normal; circulation in the extremities feeble; liver dulness diminished. Occupying the greater portion of the abdominal cavity (the umbilical and a portion of each lumbar region) there was an easily definable area of dulness, a tumor of hard consistence, round or ovoid in shape, not tender to the touch. The vomited matter had a greenish-yellow color; vomiting was not connected with taking of food; the feces were chocolate-colored and watery. The urine contained no albumin or sugar, and was of the specific gravity 1022.

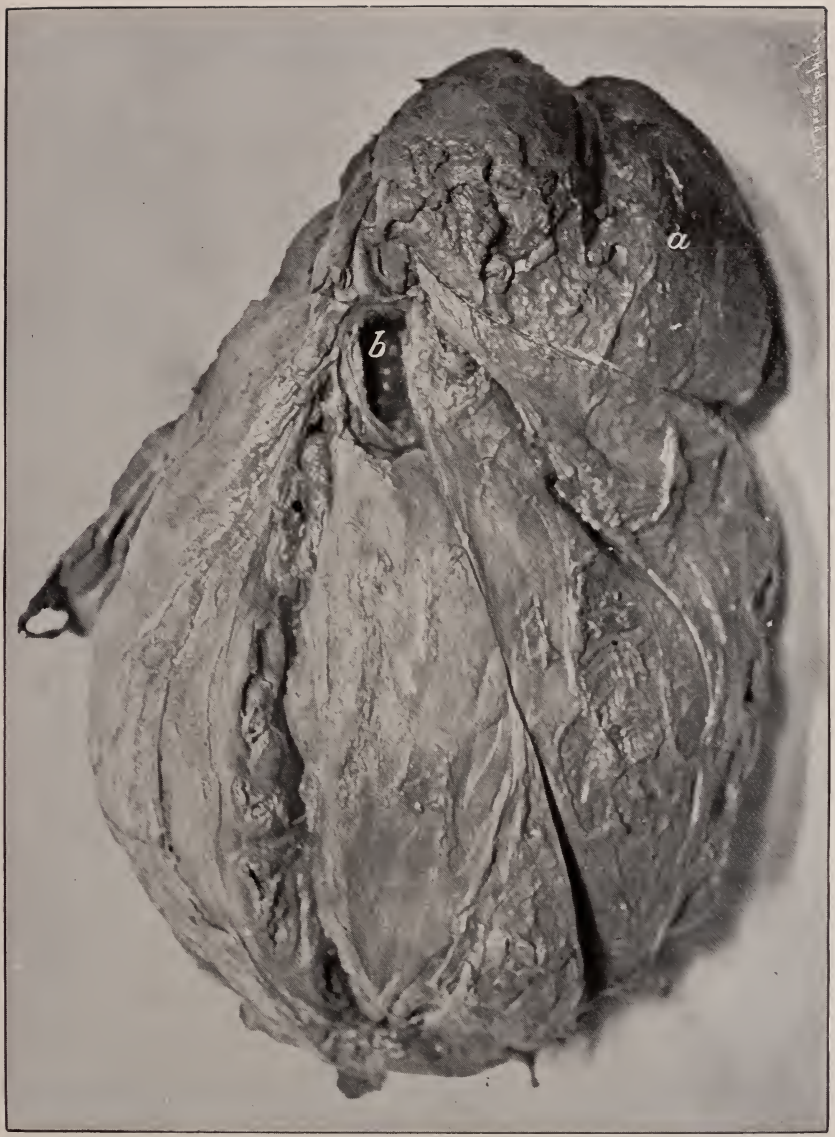
*September* 29. Vomiting comes on when the diarrhœa is checked, and when the vomiting is stopped the diarrhœa commences. Eight to ten stools in twenty-four hours. Pulse ranges between 50 and 80.

Temperature was subnormal until a few days before death, when it arose above normal mark.

Further history: Continued to lose rapidly, as much sometimes as four pounds daily. A hypodermic needle thrust into the tumor brought out a biliary colored fluid, which showed under the microscope myriads of micro-bacteria. Vomiting and diarrhœa continued, and patient died of exhaustion October 8, 1890.

*Autopsy.*—On cutting down through the peritoneum, the intestines were discovered matted together into the mass and covered with an even grayish-colored exudate, as above described. The liver and spleen were firmly attached to the mass, which, when freed from behind, was lifted out *in toto*. The pericardium was firmly adherent to the heart. The brain was not examined. Kidneys normal; lungs normal.

Dr. M. O'Hara, Sr., suggested the fact that occasionally widespread inflammations of a plastic type occur in serous membranes, as though it were a general disease. He has seen at least one such case in which the




WOLFF.—Plastic Peritonitis; tumor opened.

a, Left lobe of Liver.

b, Transverse Colon.

WOLFF.—Plastic Peritonitis; tumor opened.

a, Left lobe of Liver.
b, Transverse Colon.
c, c, c, Small Intestine.

serous membranes of the thoracic cavity, pleuræ, and pericardium, were firmly adherent in their layers and to each other, matting the thoracic viscera into a mass; but the present specimen indicated a far greater degree of the plastic process than he had witnessed.

Dr. F. A. Packard: In the summer of 1888, in the medical dispensary of the Episcopal Hospital, I saw a young man, æt. 19 years, who complained of abdominal pain, and found a solid mass in the umbilical and hypogastric region which to the touch had a bosselated outline. It felt solid, but upon careful examination and repeated palpation it was found to present a regular vermicular motion, and by continued and firm pressure it could be caused to collapse with a bubbling and gurgling sensation. The patient had recently recovered from typhoid fever. It seemed to me that the case was probably one of plastic peritonitis, although, of course, the process was by no means so marked as in the present specimen.

Dr. Wolff: Would not this case indicate that there is an idiopathic form of peritonitis? The suggestion of Dr. O'Hara in relation to the existence of widespread serous inflammations would bear out such an idea; and the present case, in which there is such marked change, in which there cannot be demonstrated any septic causation, or any specific origin, appears entirely within the limits of such a view.

Dr. Price: I have seen a number of cases of ordinary plastic peritonitis, but in all these it was possible to separate the intestines; here, however, it is utterly impossible. I am not altogether satisfied of the nature of the process here seen. I question its idiopathic character; I can scarcely classify it, but I question whether it should be called peritonitis at all. The appearance of the specimen suggests the possibility of the process being somewhat of the nature of elephantiasis. As I have met with these cases they usually are more localized than in the present one; every now and then tumor-like masses present beneath the touch, which, upon further examination, have shown no tumor at all, and which are probably of the nature of a plastic peritonitis. I recall a case of my brother's, which presented some of the features of the present specimen, which was, however, the result of malignant disease.

Dr. Walter Freeman recalled a case presenting essentially the same features as this specimen of Dr. Wolff's, which occurred before Professor Virchow's class in Berlin, and which, upon examination, proved to be a cancer of the intestine. *January* 22, 1891.

42. *Ulcerative cholecystitis, with perforation into the colon.*

Exhibited by Dr. J. Tyson and Dr. A. J. Smith.

Joseph L., the patient from whom the following specimen was removed, was a German, æt. 29 years. He died in the University Hospital several weeks after his admission from the effects of intestinal hemorrhage. There is an indefinite history of symptoms of indigestion of several years' duration. Several days before admission he was treated at the Presbyterian Hospital for an intense pain localized over the region of the gall-bladder, and this persisted when he was admitted to the University Hospital. There was a suspicion of gall-stone at the time, but the pain became general and the signs of a general peritonitis presently set in. The man was kept under the influence of opiates for more than a week; suddenly an excruciating pain manifested itself, followed in half an hour by the passage of grumous, bloody matter from the bowels and a profound condition of collapse. Such attacks, always followed by intestinal hemorrhage, recurred three times; from the last the man died in collapse.

The body when brought to section was emaciated (normally undersized) and weighed eighty-eight pounds.

Opening the abdominal cavity the peritoneum of the general cavity was found normal. In the right subphrenic region the liver over its convex surface was more or less adherent to the abdominal wall, and in the region of the gall-bladder there was a general matting together of the parts. The liver removed with this mass weighed 1555 grammes. On dissection the mass was found to consist of the colon, the gall-bladder, and liver. Between the colon and gall-bladder communication existed through a perforation through the adherent walls of each, the opening being between one and one and a half centimetres in diameter. The edges of this opening were evidently in an early stage of cicatrization, and rather thicker than the surrounding parts, smooth on the surface, slightly irregular in outline, in general circular. The tissues about this opening were considerably pigmented from hæmatic and biliary deposit. The gall-bladder could be scarcely distinguished as such, looking very much like an abscess of the liver, containing a mass of grumous material of a reddish or brownish color, some of it looking like broken-down hepatic tissue. Examination under the microscope showed these masses to be made up of clotted blood, mixed to a greater or less degree in different parts of the bladder with foreign matter. The mucous surface

of the viscus on removal of this clotted blood, etc., was found to be covered by a dense bile-stained mucoid material, almost gelatinous in consistence; and here and there were ulcerated areas covered with a dirty, purulent deposit. Several small pockets away from the general cavity, evidently formed by adhesions, or perhaps as the result of softening and rupture of the wall, were found to contain a yellowish, slightly granular matter, apparently partially inspissated bile. In removal of this mass, or in the search for the gall-bladder in the early stages of the autopsy, unfortunately the distal end of the bile-ducts, both cystic and hepatic, were lost; but examination of the remnant of the cystic duct, through which a director was passed, did not give any special evidence of obstruction, although its inner surface was much as that of the gall-bladder. On account of the manipulation necessary, in these parts, where softening was marked, many of these relations were destroyed. The gall-bladder was not enlarged, and at no point could there be discovered erosion into the bloodvessels to account for the intestinal hemorrhages, but the presence of clotted blood within the viscus was evidence of the general seat of its origin. The liver structure about the ulcerated gall-bladder was perhaps slightly more red than the rest, but not in any marked degree. The liver showed upon section a moderate degree of fatty infiltration. As a slight anatomical anomaly it was noted that the suspensory ligament passed through a hole in the liver structure at the anterior border of the organ, instead of through a notch.

The wall of the stomach was normal, its mucous coat pale. Immediately beyond the pylorus under the serous surface of the duodenum there was an area, about the size of a dime, of intense ecchymosis—not in relation with the described cholecystic mass. There was no evidence of communication with the interior of the bowel, and there was no bloody matter in the small intestine. An interesting anomaly of the small intestine will presently be described. The appendix vermiformis was patulous, about five inches in length, normal. The large intestine was normal save for the communication between the colon and the bile-bladder. There was not much matter in its interior; none of it was bright blood, but of the same general appearance as that found in the remains of the gall-bladder, reddish and grumous. The spleen was small, weighed 180 grammes, and was of normal color and consistence. The kidneys together weighed 380 grammes, were of equal size, rather pale, and smooth upon the surface. The capsule of each stripped easily, leaving a smooth, unbroken surface. On section the cortex was distinct from the pyramidal structures and of usual thickness; the pyramids were of slightly darker hue than the rest of the liver structure, from

relative vascular fulness. There was no especial deposit of fat in the pelves or about the organs. Ureters were open, free, of normal length. Bladder was normal. Mesenteric glands normal. Coming to the thoracic cavity, both pleural sacs were found empty, slight adhesions posteriorly on each side. There was considerable hypostasis in the posterior parts of both lungs; the organs were œdematous, but crepitant throughout. No tubercular deposits were found; the bronchial mucous membrane was pale, apparently slightly thickened. Pigmentation of lungs marked in the lines of the lobules. The bronchial glands were dark and firm, not especially large. The heart weighed 380 grammes. Both cavities contained clotted blood—most marked on the right side where there were large yellow clots extending into the afferent vessels. The heart presented little fatty deposit in the visceral pericardium; surface rather pale. The coronary arteries pursued a peculiar course over the surface, the anterior branch passing over the wall of the left ventricle in three parallel branches equally distant from each other, the division occurring high up upon the base of the organ. These vessels seemed somewhat thickened, prominent, and white. The wall of the left ventricle measured 20 centimetres in its thickest portion; the muscle substance was firm and of good color. The wall of the right ventricle was somewhat less than half a centimetre in thickness, firm and leathery. The valves of the right heart were normal. Both aortic and mitral leaflets were thick and opaque toward their bases; endocardium of the cavities was normal. There was a beautifully marked moderator band in the left ventricle. The general shape of the organ was nearly normal, perhaps slightly elongated, the hypertrophy being apparently almost uniform. The aorta showed a few patches of thickening near the heart and in the arch.

The data of this case point but little to an explanation of the lesions discovered at the autopsy; but, on the whole, the most probable circumstances seem to suggest that the condition was not unassociated with cholelithiasis. The pain localized at first to the region of the gall-bladder, while by no means excluding other faults, calls up such a suspicion at once—a gall-stone, probably too large to engage in the duct, but sufficient to lead to irritation which provided for a focus of suppurative infection and induced the ulcerative process; the rupture of the walls of the gall-bladder and the colon with the escape of the gall-stone into the large bowel with the first intense paroxysm. There is nothing absolutely negative to such a supposition in the history; for, unfortunately, the patient's stools were never examined with such a view in mind. Moreover, the pockets of inspissated bile in the remnants of the

gall-bladder are directly in line with such a theory. Whatever may have been the pathological course of the case, some such idea as thus outlined has some stamp of probability, and should merit consideration in similar groups of symptom manifestations. *March* 12, 1891.

---

### 43. *Diverticulum of ileum.*

Exhibited by Dr. J. Tyson and Dr. A. J. Smith.

On examining the abdomen of the above case (J. L.), there were noted just above and below the umbilicus two small scars. From the upper of these points there is a history of the escape of grumous material with fecal odor from birth until the fourteenth year of the patient's life; and after his admission into the University Hospital this spot became prominent, was incised, and a small amount of puroid matter evacuated. Communicating with this upper scar there was found the intestinal diverticulum shown to the Society. It represents the remains of the vitelline duct of embryonal life. It starts from the free surface of the ileum about thirty inches from the ileo-cæcal opening, and is patulous throughout up to the abdominal wall. It measures seven inches in length, and permits the passage of an ordinary pencil. From the point where it gains the abdominal wall it passes upward to its point of exit for about two inches, beneath the lining of the abdominal cavity, making its entire length about nine inches. The structure of the wall is, to all ordinary examination, similar to that of the bowel itself; it contained no fecal matter, however. *March* 12, 1891.

---

### 44. *Cancer of stomach.*

Exhibited by Dr. S. Taylor for Dr. J. H. Musser.

The patient from whose body the specimen was removed was a colored man, æt. about 47 years. He was admitted January 30, 1891, and died March 1, 1891. There was a history of indigestion for about four months before admission; for two months he had vomited dark material, and almost constantly spat up dark coffee-ground matter, vomiting

about every third day. The stomach was dilated, and the lower margin reached to the umbilicus. The abdomen below the umbilicus was flat; above it was a prominent swelling, most extensive to left, filling up left hypochondrium and umbilical regions. Swelling soft on palpation, except in right hypochondrium between the median line and the ribs, twelve inches below xyphoid, where a hard painful mass is distinctly outlined, becoming lost behind the ribs. It was painful on pressure and as large as a lemon. The course of the case was one of gradual emaciation and exhaustion, and finally death. At the post-mortem examination the stomach was found dilated, containing about forty ounces of fluid. The mucous membrane was covered with thick mucus, and at the pyloric end there was a trumpet-shaped dilatation. The pyloric opening did not permit the passage of water; the small curvature was puckered, and at one point the surface was much eroded, evidently the position from which arose the hemorrhages. The wall of the stomach was very much thickened about the pylorus, and on section there were to be seen small islets of colloid change. In general the growth may be said to have the appearance of a scirrhus undergoing colloid change. There were no secondary deposits in any of the organs. Hydrochloric acid was persistently absent from the gastric juice, but the chemical and physical signs of dilatation were marked.

Dr. Davis suggested that the non-metastatic tendency of these cancers of the pylorus is due to the generally slow development of the tumor, the patient dying from the disturbance of nutrition before metastasis has a chance to occur.

Dr. LaPlace said that the absence of metastasis in this case is about the only peculiarity. He touched upon the microbic theory of the origin of cancer, defending the theory by analogy. Metastasis is most frequent in cancers when the cancerous growth partakes most of the epithelial, and least frequent when it partakes least of the epithelial type. In the present specimen, which shows mostly a fibrous character and very little epithelial, there would naturally be expected but slight tendency to metastasis.

Dr. Formad referred to the frequence of cancers of the stomach without marked symptoms, and stated his belief that colloid change exercised a restraining influence in relation to metastasis. *March* 12, 1891.

### 45. *Microscopic specimens of hairy tongue.*

Exhibited by Dr. C. W. Burr for Dr. S. Solis-Cohen.

These specimens are from a case of "black tongue," or "hairy tongue," in the practice of Dr. S. Solis-Cohen. They are interesting because of the rarity of the affection, and because the appearance of the tongue is due to the overgrowth and melanosis of the filiform papillæ of that structure. Macroscopically the condition presents as black or dark-brown streaks or hairy patches over the surface of the tongue, unassociated with actual disease phenomena. Microscopically, the specimens look like disorganized fragments of hair. Two specimens were presented by Dr. S. Solis-Cohen in 1887. (See vol. xiii. p. 70.)

*March* 12, 1891.

---

### 46. *Large gall-stone.*

Exhibited by Dr. A. J. Downes.

On March 18th, of the present year, I was consulted by a lady, who stated that for two days she had been obstinately constipated and had suffered from profuse vomiting. The matter vomited was largely biliary in character. The symptoms were entirely those of intestinal obstruction—tympanites, great pain, and but little elevation of temperature; there was no jaundice, and at no time could the pain be regarded as typical of hepatic colic. Salines were cautiously administered, and in two days the bowels were again freely open. Four days ago the patient brought me this large gall-stone, measuring a full inch in diameter, dark in color, and evidently composed of cholesterin and biliary pigment. The stone presents several large facets, and is evidently one of several of nearly, if not quite, the same size. The specimen seems to me of extreme interest, from the size of the stone which was passed from the gall-bladder with the production of such slight symptoms. *April* 14, 1891.

### 47. *Tuberculous peritonitis.*

Exhibited by Dr. A. A. Eshner for Dr. S. Solis-Cohen.

Dr. A. A. Eshner presented for Dr. S. Solis-Cohen a specimen of intestines held in position by the mesentery, divided along its posterior attachment, showing a large number of submiliary tubercles imbedded in the serous layer of the intestinal walls and passing in bead-like rows in the circumference of the bowel, in the lines of the lymphatic vessels. The lymphatic glands were enlarged and hard, and the intestinal loops were glued together by rather recent adhesions.

The specimen was removed from the body of a man, æt. 76 years, an habitué of the Philadelphia Hospital, who had long been in the nervous wards, had left the institution for a time, to return and be admitted to the medical wards, where he finally died. The symptoms he presented were exceedingly indefinite, but toward the close of life he became comatose, death taking place after several days of unconsciousness. At the autopsy, pretty firm adhesions were found among the structures in both the abdominal and thoracic cavities. At the apex of the right lung was a cicatrix, probably presenting a tuberculous focus which had undergone degenerative changes. In each of the kidneys were several tubercles. The wall of the bladder was somewhat thickened; the mucous surface was covered with a muco-purulent material; upon section, the prostate was seen to be the seat of a caseous process of small area.

The interesting points in the case are the age of the patient, which was quite advanced for such an active tuberculous process, and the question as to the site of primary infection. The man had probably carried the tuberculous focus at the apex of the right lung for a long time, and the question arises whether or not the peritoneal involvement was the result of a relighting of the old tuberculous process in the lung.

There were no marked changes in the brain, only some meningeal injection and excess of fluid, the evidences of pial irritation.

*April* 14, 1891.

### 48. *Abscess of liver.*

Exhibited by Dr. D. J. M. Miller.

M. S., male, æt. 31 years, storekeeper, a great drinker and smoker, of good family history, was admitted into the Episcopal Hospital February 23, 1891. His present illness began eight weeks before admission with a chill and dull aching pain in the stomach. Following these initial symptoms he had several chills and sweats at irregular intervals, pain in the hepatic region, and progressive weakness. On admission his physical signs were as follows: Dulness over lower third of left chest, posteriorly, and faint bronchial breathing; subcrepitant râles over right base; blowing murmur at apex, presystolic in time; liver dulness four inches below margin of ribs in right nipple line and four inches below ensiform cartilage; hepatic region tender on pressure and the seat of dull aching pain; spleen came to edge of ribs. After admission his condition improved; he had an irregular fever of remittent type, but no chills or sweats until March 23d, when they again made their appearance and continued at irregular intervals until April 15th. About March 23d he became jaundiced; the hepatic region was still very tender, but no spot where it was especially so, nor any indication of fluctuation could be found. On April 10th an exploratory puncture with a medium-sized aspirating trocar was made, the trocar being introduced midway between the ensiform cartilage and umbilicus and thrust to the depth of three inches upward and backward in the direction of the left lobe, but without result.

After this he became very œdematous in the lower extremities, with signs of considerable ascites and great abdominal tenderness. This condition caused so much embarrassment to respiration that on April 19th a capillary drain was introduced and thirty-two ounces of yellow serum was withdrawn. The jaundice, which had entirely disappeared, made its appearance again on April 13th and continued until death, which occurred from exhaustion on the 24th of the same month. For a week before the end he had several severe chills.

*Autopsy.*—Frame emaciated; left leg œdematous; abdomen distended. On opening the latter about one quart of yellow serum escaped, which was filled with flakes of yellow lymph; similar flakes dotted intestines.

*Kidneys:* Enlarged and flabby; pale in color; parenchyma normal.

*Spleen:* Much enlarged; congested; easily torn; weighed one and three-quarter pounds.

*Lungs:* Crepitant throughout; right lung pressed upward by the liver; left pleural cavity showed several adhesions and a small effusion.

*Heart:* Normal in size; right chamber dilated, thin-walled; left auricle dilated; left ventricle apparently little changed; tricuspid, aortic, and pulmonary valves healthy; mitral orifice admitted two fingers; valve thickened, contracted, posterior leaflet bound down; several fibrous deposits on its free border.

*Liver:* Enormously increased in size; it extended almost to umbilicus and weighed nine pounds and fourteen ounces. Bands of lymph bound the gall-bladder to the intestines. In the right lobe, in its upper border, protruding well up into the right pleural cavity was a large abscess. Its walls were so thin that if death had been deferred a few days, perforation into the pleural cavity would have occurred. During life it produced the dulness in the right chest above mentioned, and was at one time mistaken for a pleural effusion. On opening the abscess thirty-two ounces of very offensive greenish pus escaped. In the middle of the left lobe was another abscess, small in size, and containing about four ounces of pus. Sections of the right lobe revealed pus oozing from numerous points, which appeared to be in one case a sinus connecting the two abscesses, in the others the branches of the gall-ducts. The rest of the liver tissue was deeply stained with bile, and of a peculiar, grayish-green tint.

The interest in this case was largely clinical, consisting in the comparative obscurity of the diagnosis; it was made from the hepatic tenderness and enlargement, and the chills, sweats, and remittent character of the fever, and the fact that if a trocar had been introduced during life deeply into the right thorax, in the sixth or seventh interspace in the axillary line, the abscess cavity would have been drained.

*May* 28, 1891.

---

### 49. *Corrosive sublimate poisoning.*

Exhibited by Dr. H. F. Formad.

The specimen before the Society is one of corrosive sublimate poisoning, and presents certain features which are more or less characteristic of this form of toxic change. Bichloride of mercury produces an irritation like other irritant poisons in the gastric area; and this specimen illustrates the same general features that I have seen and demonstrated in some fifteen or twenty other cases dead from the same substance. To

such a degree are these characteristics reproduced in each of these cases that I feel able to recognize fully either this or arsenic as the toxic agency from the anatomical appearances alone. There is a general irritation and a severe desquamation of the mucous membrane at the cardiac end of the stomach with softening, showing islands of membrane of the size of the palm of the hand of a macerated appearance, and strongly congested areas of mucous membrane at the fundus of the viscus. On the other hand, the other parts of the organ are but little if at all affected, the action of the corrosive sublimate being so strong as to have produced its effects only directly at the point of entrance into the stomach; very often the line of the area affected toward the cardiac end of the organ is exceedingly clear. Corrosive sublimate poisoning is becoming very much more frequent than heretofore, this substance being recently used in the manufacture of various mixtures sold for killing bed-bugs and like vermin.

The anatomical appearances of the stomach and of the rest of the gastro-intestinal tract should be further worked up in case of poisoning. I have now on hand a case upon which I am to make a post-mortem examination, in Delaware County of this State, in which a young wife is supposed to have become tired of her husband and to have given him a large dose of arsenic or something of that sort. Immediately after his death she had him embalmed with an ordinary embalming fluid, all of which fluids appear to contain as one of the necessary ingredients a very considerable proportion of arsenic, thus excluding the possibility of chemical proof of the use of arsenic in producing the death of the man. In this case I think that if I am able to find the characteristic anatomical appearances due to the arsenic ingested in the presence of the "alligator skin" membrane, I shall be able too to claim the employment of arsenic as a poison as clearly as if a chemical proof could be applied. *May* 23, 1891.

---

## 50. *Amœba coli.*

Exhibited by Dr. A. Stengel.

Dr. Stengel presented before the Society a slide containing purulent material removed from the liver by aspiration with a hypodermic syringe, from a case in Blockley, supposed to be an abscess of the liver. In this matter were to be seen a number of bodies which Dr. Stengel

regarded as amœbæ coli; there was no motion to be seen in the individuals, however, as the slide was too old to witness this phenomenon even when Dr. Stengel received it from the physician at the hospital this afternoon. Dr. Stengel remarked:

The amœba coli was first studied by Lambl, in Prague, in 1859; afterward by Loesch, in St. Petersburg, in 1873; by Kartulis, in Alexandria, in 1884; and by Osler and Councilman and others in this country. The organism is easily found in the mucous particles in dysenteric stools, and varies from twenty to thirty micro-millimetres in diameter. Usually these amœbæ contain vacuoles and foreign particles as well as active pigment particles, some of them probably micrococci, dancing about much as does the pigment in the malarial microörganism. The organism is not only found in the stools of dysenteric patients, but also in the walls and pus of liver abscesses. Moreover, Osler recently reports a case of hepatic abscess (*Johns Hopkins Hospital Bulletin*, May, 1890), in the purulent expectoration from which patient —there was no perforation of the hepatic abscess into the pulmonary structures—these amœbæ were found. Injection of material containing these amœbæ into the recta of animals has been only partially successful in producing dysenteric manifestations in these subjects. Loesch, of St. Petersburg, has succeeded in case of dogs, but Kartulis has failed in dogs and other animals, succeeding, however, in cats. I have endeavored to produce dysenteric attacks by injecting amœbæ into the recta of guinea-pigs, but failed. In the last number of *The Medical News* (May 23, 1891) occurs an abstract reference to the article of Kartulis (*Centralbl. f. Bakteriol.*, March 21, 1891), who speaks of the possibility of cultivating the amœba in an infusion of straw, which has been sterilized before inoculation with the organism. At 30° C. the amœbæ form a scum on the surface of the infusion in from thirty-six to forty-eight hours, made up of individuals much like those found in the stools of dysentery, but without so much motion. The addition of bouillon to the infusion renders it more favorable to the growth of the organism.

The individual presents a large body of a peculiarly granular protoplasm, staining well with Löffler's solution of methyl-blue; as another characteristic it may be stated that the vacuoles are sometimes surrounded by a ring of pigment.

The specimen which I here present was taken from a supposed case of liver abscess in the Philadelphia Hospital; it does not show well the vacuoles, but it does show admirably what some authors speak of as hyaline bodies, somewhat yellowish in hue and contrasting with the protoplasm of the amœba.

At one time this organism was claimed to be discoverable in the stools of patients suffering from various forms of enteritis; but more recent articles, notably that of Kartulis (*loc. cit.*), assign to it a causative influence in relation to dysentery. In the case from which the specimen was obtained there was no distinct history of dysentery, but there is at present a diarrhœa approaching a septic condition, although without the hemorrhagic characteristics of the disease in question.

Dr. Fussell remarked that a diagnostic value is being claimed by a number of writers for this organism, especially Dock, who in his last paper narrates two cases supposed to be typhoid fever in the stools of which the amœba was found, and which later verified the diagnosis of dysentery then made by the development of characteristic symptoms.

Dr. Stengel added upon this point that in a number of cases he had had an opportunity of observing last summer at Blockley the amœba was invariably found. In a case of senile pneumonia with diarrhœa there suddenly supervened a hemorrhagic character, and in a few isolated stools the organism was discovered, although in a small proportion. This man was near a case of dysentery in the ward. There also occurred in this institution at the time mentioned a case of dysentery ending fatally in the female medical wards; the woman who followed this fatal case in the same position in the ward, the mattress and other bedding having, however, been changed, very quickly developed dysentery and showed numerous amœbæ in the stools.

Dr. Miller stated that he had met six cases of abscess of the liver, but that in not a single case had there been present any dysenteric condition. He knew that in the Mississippi Valley these two conditions were not infrequently found associated, but in his experience there had not appeared any suggestion of association.

Dr. J. Howe Adams: A recent French writer, Bertrand, it is said, claims to have isolated, cultivated, and obtained in a pure state with these amœbæ coli the staphylococcus pyogenes, which he has also isolated in dysentery and in furuncles; and he has suggested that dysentery is in reality a similar condition, a furunculosis of the intestines. Undoubtedly, the additional presence of the amœba coli in hepatic abscesses associated with dysentery, serves to distinguish this form from the idiopathic form of hepatic abscess.

Dr. Stengel: I do not think that the question is by any means settled as yet. Kartulis is an enthusiast upon the subject, still it is to be remembered that, although at first he did not, yet now he does, claim dysentery to be due to the amœba coli. As to the origin of the abscess it is the common opinion of pathologists that it arises from intestinal

disease, from embolism from intestinal source. It is supposed that the organism gains the intestinal canal in the water, although this is not by any means proved to be true. *May* 23, 1891.

---

### 51. *Ulcer of stomach.*

Exhibited by Dr. D. J. M. Miller.

Dr. Miller presented before the Society a stomach considerably dilated, the pyloric orifices constricted, with large ulcerated surface at the pylorus on the posterior surface, the viscus being strongly adherent to the inferior surface of the left lobe of the liver. The history of the case is briefly as follows:

O. D., male, white, æt. 38 years, married, coachman, was admitted to the medical wards of the Episcopal Hospital October 29, 1890, complaining of intense abdominal pain, and his position in bed was that suggesting peritonitis. The man gave a history of no serious illnesses since childhood before three years ago, when he had an attack of inflammation of the bowels, and had experienced a second attack nine months ago. The fatal illness began about five weeks before his admission with pain in the abdomen and vomiting. He stated that he had always been of a constipated habit; had not been a drinker. Upon admission examination showed him to be a fairly nourished man, with apparently sound thoracic organs. The tongue was covered with a thick white coat in the centre, edges clean. The epigastric region was much distended and tympanitic, and upon touch was exceedingly painful. Under appropriate medicinal treatment, with care in diet, nutritive enemata, and gastric lavage, for a time there was considerable improvement; the washings at the beginning are noted as simply containing a great deal of dark-green, dirty matter. On February 20, 1891, the following ward note is entered: He has been annoyed by the formation of gas and constant eructations; the distress from the distention has been great. He passes hardly a moment without suffering an inconvenience. He sleeps very little, and his position in bed is in a sitting or semi-recumbent position. The pain in the epigastrium is the most constant, though he often speaks of pain in the right side and back. He has vomited three or four times in the last two weeks. Yesterday he had a dark, fluid stool; and to-day upon washing out the stomach it was noted that the washings were dark-brown in color, and contained coffee-ground

matter. Pouring the fluid slowly before the light, red blood could be seen in it very distinctly. The washing was discontinued on account of the discomfort to the patient. It is stated by the orderly that several hours before the washing the patient had suddenly fallen nearly over the side of the bed, his eyes were rolled upward, and he became very weak—probably the result of hemorrhage at the time. An hour after the washing there was passed a dark, fluid stool, and a second of the same character on the following day. On April 23, 1891, it is noted that for two weeks the patient had been doing well, that there had been no recurrence of vomiting. The day previous the abdomen had, however, become tympanitic and tender, and a localized œdema appeared about the umbilicus. On the day of the note the vomiting began once more a brownish-looking fluid being ejected. The pain in the abdomen became intense; the following day there occurred a copious hemorrhage from the bowel of partly digested tarry-looking blood, and the man died shortly from exhaustion.

At the post-mortem examination the lungs were found firmly adherent by pleuritic formations. The lungs were deeply congested, and in places, especially along the edges, were full of liquid blood. The heart was normal in size, the left ventricle firmly contracted, the valves normal. The kidneys were in a slightly granular condition, the capsules somewhat adherent and the cortices thin. The spleen was small and pale in color. The stomach, as may be seen, is much dilated, and its walls thickened. It is adherent to the liver over the whole of the left lobe. The entire mucous surface, especially along the greater curvature, is covered with dark-red extravasations. At the pyloric end is to be seen this large crater-like excavation, with hard edges and base; and the pyloric opening is decidedly infringed upon by the thickened walls, although the index-finger may be passed through the opening along the lesser curvature. The intestines present no marked abnormality. The mucous surface of the stomach is very much eroded and diseased, and marked by hemorrhagic extravasations everywhere. The walls are, as may be seen in the specimen, much thickened and indurated, particularly around the pyloric end. This crater-like ulcer measures three inches in its largest diameter and about two inches across; its floor and sides are hard, smooth, and fibrous, like an old cicatrix. The pylorus is not much encroached upon, but here at the upper margin of the opening there is a distinct fibrous patch causing some constriction. The contents of the stomach were found to be about three and a half quarts. The liver was much contracted, weighing, together with the attached stomach, but three and a quarter pounds. The entire left lobe of the organ is

bound firmly to the stomach, and on section shows these dense bands of tissue passing into the interior, almost cartilaginous in their consistency.

The case is particularly interesting in connection with the history of the illness and the marked relief afforded the patient by gastric lavage, as well as the pathological changes which the specimen presents.

Dr. F. A. Packard: I am somewhat interested in the specimen of gastric ulcer presented by Dr. Miller, as in 1887 the patient came under my care in the Pennsylvania Hospital. He had been healthy until then, save for the occurrence of certain diseases of childhood and the "phthisic" at the same period of life. During the summer of the year named he had had an attack of diarrhœa from eating unripe fruit, followed by peritonitis, thought to be due possibly to an inflammation in the ileo-cæcal region. The man improved in the hospital under application of poultices over the abdomen, with opium and calomel internally, but to my knowledge has had several acute exacerbations since. He often complained of eructations of sour water, the frequent expulsion of almost a tumblerful of clear liquid being frequently witnessed; but, while I knew him, he did not vomit. The existence of intestinal adhesions was strongly suspected from the nature of the symptoms—a rapidly growing pain culminating with gurgling and then a sudden relief. There was a great deal of tenderness in the right iliac fossa, but it was thought at the time of his presence in the Pennsylvania Hospital that the peritonitis was secondary to enteritis. There was at no time any hæmatemesis or localized epigastric pain; in fact, during the long period over which I saw him at frequent intervals, the suspicion of gastric ulcer never was entertained.

Dr. Eshner recalled, in contrast to the case of lesion of the stomach presented by Dr. Miller, that of a man, somewhat demented, possessed of an epitheliomatous growth back of the ear. There were no symptoms whatever of any enteric or gastric lesions; but at the autopsy there was found a large ulcerative new-growth in the wall of the stomach, and the gastric wall adhering to the under part of the left lobe of the liver, with softening of the latter area.

Dr. Formad remarked that he had had the opportunities for examining a large number of gastric ulcers, but had only seen a few that presented features like this, in that the formation of adhesions to a neighboring organ had prevented perforation, and caused the ulcerative process to extend laterally, making the ulcer such a broad one. These are the only circumstances, adhesions to neighboring structures, under which gastric ulcers are apt to become at all large. Strange to say, all of this kind of ulcers in his collection came from dements. *May* 23, 1891.

### 52. *Tubercular enteritis.*

Exhibited by Dr. S. Solis-Cohen.

This was a remarkable specimen of tubercular enteritis with numerous ulcerations of varying shape, some longitudinal in relation to the axis of the bowel, others round, others oval, with the long axis of the ulcer transverse to the axis of the gut, still others linear in shape and passing around the inner circumference of the bowel. The specimen was removed from the body of a man presenting the usual symptoms of phthisis. At the autopsy, performed by Dr. Stengel, tuberculosis was found manifesting itself in the lungs and in the intestines; but there was no general tuberculosis. Upon the serous side of these intestines could be seen a deposit of tubercles, like rows of small white beads, passing about the outer circumference of the bowel in lines not corresponding to the bloodvessels which were prominent from marked injection.

Dr. Allen J. Smith remarked, in connection with this specimen, that its ulcers call up forcibly the views as to the manner of the production of tubercular enteric ulcers and the means of distinguishing tubercular from typhoid ulcers by their shape. It is usually accepted that in general this latter differentiation is to be readily made by the shape of the ulcers, the accepted view, at least the one which is usually put forth in this Society, being that ulcers of an oval shape with the long axis parallel to the axis of the bowel are of typhoid origin, while such as are round or have their long axis transverse to that of the intestine are tubercular. That such a rule as this is faulty is but too easily proved from the experience of nearly every one who is accustomed to witness many post-mortem examinations; for in many cases of typhoid fever ulcers are to be found with their shapes decidedly opposed to such teachings, and the same is true of tubercular enteritis. In typhoid fever bowels it is by no means an uncommon appearance to have but a portion of the Peyer's patch invaded by the process (early in the course of that particular location) giving rise to a distinctly rounded ulceration, and not infrequently, especially in the portion of the ileum near the ileo-cæcal valve, the bowel is found involved almost absolutely about the circumference. Rounded ulcers arising in the solitary follicles are also of not rare occurrence. On the other hand, while in the average of cases the dictum stated above may be true, yet ulcers having the same shape as that classed as typhoid may often be seen in tuberculosis, as in the present specimen.

There is fault, then, in our teaching; and the instance at hand serves

as an excellent text for its illustration and correction. To understand this subject there may be recalled briefly the inherent nature of the two processes—tuberculosis on the one hand, a long-existing, slow, infiltrative invasion attacking by preference the loose and more cellular structures, but by no means limited to them, but involving as well the denser and more fibrous tissues; typhoid, on the other, a rapidly necrotic process, usually limited by its inherent nature or by its own devastations before it has a chance to invade other than decidedly cellular structures. These two processes may well be likened to the more clearly understood processes in cancer and sarcoma. Tuberculosis corresponds with the former of these two neoplastic invasions; arising from cellular tissues, it is of slow growth, chronic course, and its elements steadily push out into the surrounding formations and constitute a broad zone of infiltration around the mass of the neoplasm. On the other hand, sarcoma is rapid, it infiltrates quickly and as quickly the tumor mass grows out almost to the very edge of the infiltration zone; and in this feature it resembles the typhoid ulcerative process. The typhoid fever necrotic power is a self-limited one; and while it begins in the soft structures of the Peyer's patches and often in the solitary glands of the intestinal mucous membrane, and rapidly invades the entire anatomy of these parts, before it gains sufficient ground in the structures around these lymphatic elements, either the disease has reached its own limit or the patient has reached his. It therefore conforms in its gross appearances, as a general rule, to the anatomy of the lymphatic elements in the intestinal mucous membrane. Yet this is not always so; in the lower portion of the ileum, a part of the bowel which from its arrangement is apt to retain for a time the contained mass, the longer and perhaps more virulent contact of the typhoid material is often sufficient to give rise to masses of necrotic change that are by no means simply elongated or oval patches, but are found to have involved almost the entire membrane. Here, too, is the point where most frequently the ulcerative process extends deep into the wall of the intestine, and here are to be found most frequently the perforations in typhoid fever. The typical typhoid patch is rather evenly involved and oval then. Why? Because it prefers the lymphatic elements as found in Peyer's patches; because it rapidly involves these structures, and because before it can affect the surrounding tissues it reaches its natural limit. On the contrary, tuberculosis, which preferably affects the same structures, is more slow. Tubercular ulcerations of Peyer's patches are less liable to conform entirely to the anatomy of these agminated glands; they are often found involving perhaps but a single end of the agmination, and a rounded, ragged ulcer is the result. The

general process is not known to be self-limited, at least it is very much longer in duration than is typhoid fever; the invasion is like that of cancer, sending out processes of the original mass in every direction into the surrounding tissues, and in its slow, sure infiltration converting not only the lymphatic elements but also the rest of the mucous membrane into necrotic tissue. It has a broad zone of infiltration, and slow in its course, is resistless in its attacks no matter the character of the tissue invaded, and the result is the formation of ulcers, larger, broader in every direction, as a rule, than those of typhoid fever, and as an average deeper.

Such a view necessarily predicates a belief in the direct inoculation of the mucous membrane by the tubercular matter, a view which must grow stronger and stronger, no matter the opposition that has long been directed against it. It is usually stated in this Society that tubercular ulcerations of the intestines are not long in the direction of the axis of the bowel, but rounded or transverse to that axis, because the primary point of inoculation is invariably upon the serous surface of the intestine. It is stated by those who make these assertions, that where tuberculosis attacks the intestines it is practically always secondary, usually secondary to tuberculosis of the lungs, and that it is generalized from this primary focus by way of the lymphatic system. Eventually, conformably to this view, the tuberculous *materies* gains the lymphatics which course around the external circumference of the bowel, and there the tubercular masses are deposited as the bead-like tubercles seen in this specimen. This tubercular deposit is supposed by its very bulk to encroach upon the vascular supply of the inner layers of the coat of the bowels and by producing an anæmic condition to bring about the necrotic changes which are seen in the tubercular ulcerations of the mucous membrane. Because these deposits are arranged circularly to the axis of the bowel, it is argued, so are the ulcers found having the same direction. In such an argument as this there can but be the most palpable errors; the entire view is based on a very false idea of generalization. There are, briefly, three ways of the generalization of this infection through the body which are possible. In the first place, tuberculosis may be disseminated from a prime focus by the blood current; in such an event the most natural result, and the one to be always expected, is the production of general miliary tuberculosis, for it is highly improbable that, in the event of a tubercular mass advancing to such a degree that its elements gain entrance to the bloodstream, but one or two bacilli should be carried off, or, on the other hand, that the great numbers which surely are borne away in the blood should all find lodgment in the same locality. In

many of these cases of tubercular enteritis, however, no such general tuberculosis is to be found—only pulmonary and intestinal tubercular deposit; and this fact excludes the blood from being the usual mode of generalization in the production of tubercular enteritis. Again, it is possible that tuberculosis may be transmitted along the lymphatics. But here the argument arraigned is doubly at fault in viewing the tubercular enteritis as arising from such a generalization from a pulmonary focus, for it is apparently forgotten that the lymphatics of the intestines pass from, rather than toward, the bowel, and eventually reach the thoracic duct and the venous blood. In other words, the lymphatic current is opposed to the infection of the bowels from the lungs because it is an upward flow, not a downward. Finally, and this is the view to be accepted from the testimony of specimens and laboratory researches, a tuberculosis in the lungs may reach the bowel by the swallowing of tubercular sputum and the inoculation of the enteric mucous surfaces, avoiding both stumbling-blocks of a general tuberculosis following a hæmatic dissemination and the upward current of the lymphatics.

By this last idea one may readily explain the transverse ulcerations upon a simpler and a vastly more probable basis than by necrosis secondary to pressure from such minute and occasional masses as are to be found in the peritoneal side of the intestinal wall. These linear transverse ulcers, which are so well shown in the specimen before the Society, are to be found in greater numbers and in greater beauty in the upper portions of the smaller bowel between the transverse rugæ and *valvulæ conniventes*. The tubercular irritant material is retained in these folds, and in the movements of the intestinal walls is urged from point to point about the inner circumference, inoculating the entire surface and thus giving rise to the linear, circumferential ulcerations here seen. As the case advances the ulcerative process also goes on and more of the length of the gut is involved, and the possibilities of the process are only limited by time and the life of the individual. Lower in the bowel the ulcerations are more massive, the folds being less rarely seen; and follicular ulcerations, corresponding to the solitary glands in the mucous membrane, and not to single tubercles on the peritoneal side of the gut, are of frequent occurrence. It is objected by those who do not accept this view but hold to the one already stated—of lymphatic generalization—that in tubercular ulcers the mass of tubercle bacilli are found nearer the serous than the mucous side of the intestinal wall; and this circumstance is claimed to prove the advance of the process from without inwardly. There is, however, another side to such a statement and its truth must be apparent; the claim is really an argument in favor of

the theory of direct inoculation. Where in a cheesy tubercle are the bacilli found? Not in the cheesy, necrotic mass in the centre, for their destructive work in that locality is accomplished; they are invariably to be discovered in the surrounding zones of tissue, working where there is work to be done—where structure is to be demolished. When that demolition is complete either the generation of bacilli is replaced in the surrounding sounder tissues by a new one, or they possibly have slight motile power of which we are as yet ignorant; at any rate they are no longer to be seen in the necrosed mass, but in a zone further from the centre of the focus. So, too, in the case of the intestinal ulcer; the central, oldest part of the tubercular focus is in the mucous surface, and as the process advances the bacilli are to be found nearer and nearer the opposite portion of the wall. Tubercle bacilli are even more ideally human than men, for they know their business and attend to it.

There are other features of this question which might be profitably considered—the real mode of development of the bead-like lines of tubercles on the serous side and their true influence in furthering the disease process, the essential histological features of the ulcers of the contrasted processes, typhoid fever and tuberculosis, and others; but these remarks are probably sufficient for the time to indicate a line of reasoning which seems to have been overlooked by the Society in its deliberations.

It may be of interest to add, although not *apropos* perhaps, a reference to the recent successful search for the tubercle bacilli in the fœtus of the tubercular human mother by Birch-Hirschfeld (*Beiträge zur Pathol. Anat. und zur Allgem. Pathol.*, 1891, p. 429) by means of culture methods. It is the first absolute proof of the transmission of the disease from one generation to another in the human species, and fixes our belief in the heredity of tuberculosis. *June* 25, 1891.

---

53. *Foreign body lodged in the œsophagus; ulceration into the trachea.*

Exhibited by Dr. H. Taylor.

The specimen presented consisted of the upper portion of the œsophagus and trachea of a small boy. The lad had swallowed a jackstone, which had lodged within about two inches from the superior termination of the œsophagus, and had ulcerated at two points, where the pro-

tuberances of the toy had pressed, into the trachea. The jackstone was swallowed on a Saturday, and the death occurred on the following Monday, the autopsy showing the change indicated. Dr. Taylor expressed the view that there should not have been the difficulty stated by the attending physician in the removal, as he had been able by inserting his finger into the gullet to feel the foreign body after death, before the autopsy.

Dr. J. B. Deaver expressed similar views, and thought that the substance in the position shown by the specimen should have been reached by the mouth and removed in that manner. The case, moreover, was evidently one upon which the operation of œsophagotomy might readily have been performed had the removal by the mouth been impossible. He recalled to the members an operation he had performed some years since of œsophagotomy for the removal of a set of false teeth which had been accidentally swallowed. *June* 25, 1891.

---

### 54. *Gastric cancer.*

Exhibited by Dr. F. A. Packard.

This specimen is shown by me through the kindness of Dr. H. A. Slocum. The patient was a colored woman, æt. 73 years. At the autopsy the usual lesions of old age were found well marked. Upon the posterior wall of the stomach, near the pylorus, was found this epithelioma, presenting the appearance of an ulcer with heavy, ragged edges. It does not involve the pylorus, being at least three-fourths of an inch removed. The floor of the ulcer is ragged and covered with sloughing masses, the whole mass looking much like a large slough. The wall of the stomach at this point when the softened matter is cleared away is really the anterior surface of the pancreas. There were also present two small shot-like secondary deposits in the spleen, and all of the lymphatic glands in the region of the pancreas were enlarged and hard. The liver showed no secondary deposits. *June* 25, 1891.

## IV. CIRCULATORY AND BLOOD-MAKING SYSTEM.

1. *Aneurism of first portion of the arch of the aorta, communicating with the pulmonary artery (spontaneous varicose aneurism of Thurnam).*

Exhibited by Dr. F. P. Henry.

In February, 1888, I called at the out-patient department of the Pennsylvania Hospital to see my friend, Dr. Caspar Morris, and found him engaged in the examination of the patient from whom this specimen was obtained.

Dr. Morris asked me to examine the man and I did so, but have no recollection of the physical signs at that time. I remember distinctly, however, that the man was spitting blood, and, as he subsequently informed me, this was the only occasion on which this symptom was present. When I went on duty at the Philadelphia Hospital, on February 1st of this year, the man was an inmate of one of the wards transferred to me by Dr. Curtin, who had correctly made the diagnosis of aneurism. The patient reminded me of our former meeting at the Pennsylvania Hospital, and I asked him whether he remembered what I had said about his case. He told me that my remarks were very non-committal. It is, perhaps, just as well that they were so, for he had preserved a list of all the diagnoses of his case that he had been able to obtain, and I have no right to suppose that mine would have been more nearly correct than the majority of them. They were as follows: 1. Double aortic murmur with pericardial friction; 2. Anomaly of the ventricle; 3. Pericarditis; 4. Aortic obstruction; 5. Aneurism of the heart; 6. Pericardial neuralgia; 7. Aortic systolic and mitral systolic murmur; 8. Valvular heart disease; 9. Peculiar and puzzling; 10. An interesting but difficult case in which to make a diagnosis.

When I took charge of the case the principal symptoms were dyspnœa and pain in the chest and dorsal region of the spine. There was great œdema of lower limbs and scrotum and considerable ascites. There was well-marked dulness in the left infra-clavicular region, and in the second left intercostal space pulsation could be plainly felt. In the same region a distinct thrill was present, and was so marked as to be

easily felt through the patient's underclothing and night-shirt. There was no perceptible inequality of the radial pulses. Neither pupil was contracted, and at no time had there been flushing of either side of the face. There was no dysphagia, and, although there was a certain amount of cough, it was not of the violent, paroxysmal form caused by irritation of the recurrent laryngeal nerve.

To recapitulate: The equality of the radial and carotid pulses, the absence of unilateral myosis and flushing of the face, of dysphagia and tracheal stenosis, as well as of violent paroxysmal cough; and, finally, the detection of pulsation and thrill well to the left of the sternum, led me to assign the situation of the aneurism to the junction of the transverse and descending portion of the arch. You will observe that it occupies the right sinus of Valsalva, and communicates with the pulmonary artery by an oval aperture of which the long diameter measures about one-fourth of an inch. The opening is exactly at the point of attachment of a pulmonary leaflet which is, therefore, almost entirely destroyed.

There is another small aneurism about the size of a walnut in the descending portion of the arch. Its posterior wall has been torn away in the dissection. This small tumor had eroded the body of one of the vertebræ. Some years ago this man had a popliteal aneurism, which was cured by ligature of the femoral, the operation having been performed at the Pennsylvania Hospital by Dr. John H. Packard.

Rupture of an aneurism into the pulmonary artery is a very rare accident, and is generally held to be the immediate precursor of death. For example, it is stated by Garland, in Pepper's *System of Medicine*, that "rupture into the pulmonary artery causes great dyspnœa and distress, and death follows immediately." A very hasty, and therefore a very imperfect, examination of the literature of this subject leads me to question the correctness of this statement. In an excellent article on "Aneurism" in the *Medico-Chirurgical Transactions* for the year 1840, Mr. Thurnam designated cases of aneurism of the ascending portion of the arch which communicate with the superior vena cava, the right auricle, the right ventricle, or the pulmonary artery, in one word, with the venous side of the circulation, as "spontaneous varicose aneurism." He reports fourteen such cases, in five of which the communication was with the pulmonary artery. These cases are Nos. IX. to XII., inclusive, on the list.

In case IX. death was from gradual failure of the circulation, and there were three communications between the aneurismal sac and the pulmonary artery. It is altogether beyond the bounds of probability

that three openings into the pulmonary artery should have formed simultaneously.

In case X. death occurred in about twelve hours after the probable time of formation of the opening, which was single.

In case XI. the perforation, which was in the left branch of the pulmonary artery, occupied the exact site of the ductus arteriosus. The patient died shortly after admission, and there was no clinical history. This may have been a case of patulous duct complicated with aneurism.

In case XII. death suddenly occurred at the probable time of perforation.

Besides these four cases, Mr. Thurnam refers to six specimens illustrating this variety of varicose aneurism. Four of these specimens were at the time referred to—about fifty years ago—in the Museum of St. Bartholomew's Hospital, another in the Hunterian Museum, and the sixth in the Musée de la Fac. de Méd. de Paris. Since that date the list may have been greatly increased.

A case is reported by J. Hughes Bennett, in which the perforation must have occurred some time before death, as there was no sudden change either in the physical signs or symptoms, the patient gradually sinking from progressive failure of the circulation.

In a case reported by Smith,[1] the edges of the opening were thickened and rounded off, and the communication between the two sides of the circulation must have existed from Christmas until the following April.

Wade[2] reports a case in which the opening into the pulmonary artery probably occurred eight weeks before death.

Œdema, more or less general, appears to be a constant symptom of spontaneous varicose aneurism, and, according to Thurnam, diagnostic indications concerning the point of venous perforation may be derived from its extent and situation. When the communication is between the descending aorta and the inferior vena cava, the dropsy is limited to the lower half of the body; when between the ascending aorta and the superior vena cava, it is most marked in, or limited to, the arms, face, and upper half of the trunk; when between the ascending aorta and one of the right or left cavities of the heart, or the pulmonary artery, it is universal. In the patient from whom the specimen before you was procured, the œdema was universal and was most marked in

[1] Dublin Medical Journal, vol. xviii.

[2] British Medical Journal, July 6, 1861.

the left upper extremity, the skin of which was also latterly the seat of an acute diffused erythema.

In this form of varicose aneurism the blood is propelled into the pulmonary artery both during systole and diastole, and therefore there are two murmurs, or, as in the case I am reporting, one prolonged, rasping murmur. I know of but one instance in which the diagnosis of this condition was accurately made, and this was the case of Dr. Wade, of Birmingham, England, already quoted. According to Wade, the key to the diagnosis of this form of varicose aneurism is the non-conduction of the second murmur to the apex of the heart. We should, therefore, he says, be at a loss, 1, when aortic regurgitation existed; 2, when pulmonary regurgitation existed; 3, if varix produced no murmur with the second sound; 4, when there was also an opening into either ventricle or into the left auricle or its appendix.

In the case of John C. no hissing sound was ever heard, the murmur as already stated being systolic, loud, rasping, and heard with greatest intensity to the left of the sternum, in the second intercostal space, where also a well-marked thrill could be felt. Both the signs and symptoms seem to me to indicate that this aperture of communication between the aneurismal sac and the pulmonary artery is of long standing. A microscopic examination of the edge of the aperture might, perhaps, throw some light on this question. *May* 9, 1889.

---

### 2. *Spleen after splenotomy.*

Exhibited by Dr. A. J. Downes.

In October, 1887, I opened the spleen of Mrs. B. The case was described in full in a paper read before the Philadelphia County Medical Society, entitled, "Splenotomy, Splenectomy (?)," at which time I exhibited the patient. She was in fair health, but had a sinus from a counter-opening. Later she refused further operative interference. She went to the country, where she was unattended; the sinus discharged a septic, offensive pus, and she finally succumbed to amyloid disease. She died July 9, 1889, and I obtained the privilege of a post-mortem examination the following day.

I present the spleen with the skin, sinus, and tube running into the spleen. The organ is about the size of a normal one. It shows the

cicatrix where the primary opening had been made into it through the abdomen.

I present the specimen because in my paper on the case, while not claiming a splenectomy, I suggested that there was good reasons for believing that the spleen substance had disappeared. At the time of operation the spleen was larger than an adult head and extended to the crest of the ilium. A cyst was entered and later the cyst wall was removed, and at one time as much splenic tissue as a normal organ contains; at various other times not a little was removed, and the balance there was reason to believe had sloughed. I called it an intracapsular removal. Very little spleen tissue, I felt convinced, was left—not as much as now presented. May not some of the organ I show have been renewed from the remaining capsule? The drainage-tube was in the spleen from time of operation, October 14, 1887, to July 9, 1889, about twenty-one months—a very unusual thing, with nothing similar recorded. *November* 14, 1889.

---

3. *Hemorrhagic pericarditis with perinephritic abscess.*

Exhibited by Dr. J. L. Rothrock.

C. D., æt. 52, blacksmith; good family history; hard drinker, but previous health good. Admitted to Philadelphia Hospital August 25, 1889, unconscious and apparently in uræmia. Examination of urine showed almost complete suppression, containing a large amount of albumin and numerous granular and hyaline casts. Slowly recovered consciousness after a few days and for some weeks after ran a course of irregular temperature. About four weeks after admission developed pericarditis. On one occasion examination of the urine showed pus in large quantity, but never subsequently. Died October 10, 1889.

*Autopsy* revealed the following:

*Thorax:* Left pleural cavity contained about two pints of clear fluid; no adhesions. Lower lobe of lung collapsed, upper portion of lung slightly emphysematous. Right side, pleural adhesions posteriorly; lung slightly emphysematous anteriorly and œdematous posteriorly. On opening pericardium about eight ounces of bloody fluid escaped. Surface rough; adhesions all over surface, with interstices between, giving a honeycombed appearance.

*Heart:* Surface ragged, covered with ribbons and fringes of new-

formed lymph stained dark-red color. Left ventricle hypertrophied. Mitral valve: edge of leaflets somewhat thickened and congested, suggesting a beginning endocarditis; valves competent; no constriction of mitral orifice. Ascending branch of aorta slightly dilated, roughened by calcareous plates and patches of atheroma.

*Abdomen:* Adhesions between liver and diaphragm; capsule of liver thickened; numerous fissures over surface.

*Spleen* slightly enlarged; capsule very much thickened.

*Kidneys:* Right about normal in size, rather firm; capsule strips easily, leaving a grayish surface, exposing here and there small retention cysts. On section cortex narrow, of pinkish-gray color, medullary portion somewhat injected. Left kidney somewhat larger, and on upper surface between kidney and tail of pancreas, an abscess was found burrowing into the pancreas almost across its entire breadth, leaving the tail of the pancreas connected to the main portion by a slender strip of normal structure. It also burrowed toward the descending colon, the external surface of which it reached, but did not perforate. It also burrowed toward the kidney, seeming to work its way underneath the capsule, but did not communicate with the pelvis of the kidney. Structure of left kidney on section resembled that of right.

*Stomach* much congested; at cardiac end, numerous punctiform hemorrhages.

*Liver* slightly smaller than normal; upper surfaces uneven; tissue firm, especially about the numerous cicatricial scars.

*Gall-bladder* moderately distended; contained a few irregularly shaped calculi of dark color, about the size of split peas. Remainder of organs presented nothing unusual. *December* 12, 1889.

---

4. *Acute endocarditis in phthisis.*

Exhibited by Dr. J. H. Musser.

The patient from whom these specimens were obtained was a colored boy, æt. 17 years, who presented during life no symptoms or physical signs except those of tuberculosis of the lungs.

The left ventricle contained soft ante-mortem clots. Acute endocarditis of mitral valve, with contraction of the orifice. Along the edges of the aortic leaflets are recent vegetations; ante-mortem clot in coronary artery.

Upper and middle lobes of right lung show general tubercular infiltration. Lower lobe partly compressed, and containing only a few scattered areas of tubercular disease. Bronchial glands tubercular.

In lower portion of upper lobe of left lung a large, recent cavity and small areas of pneumonic consolidation. At anterior margin a number of small cavities. Dissemination of tubercles in lower lobe.

*January* 9, 1890.

---

5. *Case of chronic valvular disease with multiple emboli.*

Exhibited by Dr. J. Leidy, Jr.

The patient from whom these specimens were removed was admitted to Dr. Hutchinson's ward of the Pennsylvania Hospital, June 30, 1889, with the following history:

M. W., female, æt. 33 years, married. Family history, negative.

*Personal history:* A woman of temperate habits. No history of syphilis or rheumatism. Menstruation regular. Has had three still-born children, the last in March, 1889. Before the last birth she had a severe uterine hemorrhage, which weakened her both mentally and physically, and since the birth of her last child she has suffered from severe occipital headache, with vomiting at irregular intervals. No history of chills, fever, night-sweats, or cough, and bowels have been regular. Was taken ill three days before admission.

*Status præsens:* On admission she was pale and anæmic; tongue heavily coated; temperature $103\frac{4}{5}°$; pulse 112, soft and compressible; respirations 36; she was delirious.

*Physical examination*, with the exception of the above, and a loud, whirring systolic murmur, was negative. Murmur was heard best at the apex and over the base, in the axilla and the vessels of the neck, and both pulmonary and aortic cartilages. No œdema. Examination of urine: Sp. gr. 1020, acid, dark amber color, trace of albumin. No casts or sugar.

*July* 3. Temperature normal, and has cleared up mentally, though still aphasic; takes nourishment well.

5*th.* Character of the murmur has changed, becoming softer and less distinct.

10*th.* Temperature 102° to-night, preceded by a chill, and complains of some pain over the liver.

14*th.* Left knee is swollen and painful to-day. Ophthalmoscopic examination shows the presence of several small retinal hemorrhages in both eyes.

17*th.* Several small conjunctival hemorrhages. Patient is feeling very much better, and is anxious to get out of bed.

20*th.* Numerous punctiform hemorrhages have appeared over the forearms, and ecchymoses upon both legs, over the tibiæ principally.

22*d.* Aphasia has entirely disappeared to-day. Blood count, 4,040,000 red corpuscles to c.mm. One white to 124 red.

29*th.* · Complains of severe pain in the abdomen, principally over left side over splenic area; is sensitive; no tympanites; the area of splenic dulness is increased downward and toward the median line, the edge of which can be distinctly felt; marked tenderness on pressure over this area; no nausea or vomiting; temperature 102°; normal in morning.

*August* 4. Sitting up for past few days, feeling better.

21*st.* An attack of palpitation of the heart, with dyspnœa and cardiac failure; there were severe pain and præcordial distress; murmur was roaring in character; face became cyanotic, and was greatly agitated; pulse intermittent.

22*d.* Had a similar attack to-day, though not so severe; rallied and feels better.

*September* 15. Pain in lower extremities, both of which are covered by ecchymoses.

18*th.* Another attack of cardiac failure to-day.

19*th.* Severe pain in the right side to-day, with a complete right hemiplegia, involving tongue and facial muscles; aphasia pronounced; though conscious, she could make her wants known with difficulty.

20*th.* Paralysis is complete, but has cleared up mentally.

26*th.* Complains of pain in the left eye, and says she cannot see. Ophthalmoscopic examination showed the presence of extensive retinal hemorrhages.

30*th.* Anæmia has increased, and has been progressive since her admission; has failed both mentally and physically.

*October* 16. Another attack of cardiac failure to-day.

18*th.* A typical herpes zoster has appeared along the distribution of the right infra-orbital nerve.

20*th.* The same has appeared along the course of the left infra-orbital, making it symmetrical.

22*d.* Severe attack of abdominal pain to-day; mostly over the spleen and across the small of the back.

26*th.* *Urine:* Sp. gr. 1024; acid, dark, cloudy, and deposits a heavy

sediment; albumin considerable; casts—hyaline, granular, epithelial, and fatty; no sugar; murmur is distinctly musical, and is transmitted toward axilla and vessels of the neck; the joints upon the paralyzed side have become flexed and rigid; blood count, 3,400,000 red to c.mm., one white to 300 red; hæmoglobin, 42 per cent.; another attack of abdominal pain over spleen and liver, with some diarrhœa.

*November* 17. Ecchymotic spots, principally about the larger joints —hip, knee, and ankle.

18*th*. Had a convulsion this morning (tetanic), involving both sides of the body; the head was drawn to the left side; nystagmus; pupils dilated, equal; involuntary evacuation of bladder and bowels, followed by a clonic fibrillary convulsion of the muscles of the left chest; unconscious; pulse irregular; ecchymoses over most of the bony prominences of the body; respirations, Cheyne-Stokes; died in coma at midnight.

The treatment throughout the case was directed both locally to the heart and to the general constitutional condition.

*Tonics:* Iron, quinine, digitalis, whiskey, with proper attention to diet.

*Autopsy* was made twelve hours after death. Body extremely emaciated; rigor mortis well marked; petechial and ecchymotic spots upon the extremities and back; there was also ulceration of the left cornea; no evidence of syphilis.

Exposing the abdominal viscera, the vessels of the omentum were congested; the edge of the spleen extended to the right, beyond the median line for one to one and a half inches, and the whole organ was brought prominently into view, and was adherent to the peritoneum at various spots over its whole surface; stripping off the same ruptured the capsule in several places, from which there escaped brownish-colored pus, which was very offensive.

On removal of the sternum it was found that the heart had pressed the left lung posteriorly. On opening the pericardium, its surface was pale, and the cavity contained about two ounces of serum.

*Heart* weighed eight ounces; both ventricles contained chicken-fat clots, extending for some distance into the pulmonary arteries; right heart was normal; the mitral valve was completely obstructed by vegetations extending from the leaflets into the left auricle, and along the chordæ tendineæ and papillary muscles, one of which was completely torn across; the chordæ were frail and broke easily; looking from above downward, the whole mitral orifice was occluded by a cauliflower outgrowth extending fully one-half an inch in various directions into the left auricle from the mitral leaflets; upon the aortic leaflets were

several small vegetations; heart muscle was friable; endocardium pale, otherwise normal; coronary arteries pervious.

*Lungs* collapsed and normal.

*Kidneys* weighed five and a half and six ounces respectively; capsules stripped off easily, with the exception of those portions covering two infarcts in the right and one in the left kidney.

*Spleen* weighed fifteen ounces; the capsule was adherent to the peritoneum by recent and old adhesions; also to the left lobe of the liver the organ is enlarged and covered upon its surface by multiple infarcts and areas in various stages of inflammation, some of which were broken down, and from which several ounces of fœtid pus escaped; upon section the infarcts were triangular in shape; upon the capsules the organ was shelled out with difficulty, every infarct being adherent to these adjoining structures.

*Liver* and *intestines* negative.

*Brain:* Membranes and ventricles normal; emboli were found in both Sylvian arteries; the right cerebrum was very much softened; the left firm upon pressure.

Middle ear, lateral sinuses, aorta, femoral, and iliac vessels negative.

Extravasations of blood remained well marked upon the extremities, principally over the bony prominences. *January* 24, 1890.

---

6. *Aneurism of the descending portion of the thoracic aorta.*

Exhibited by Dr. A. V. Meigs.

The patient, a man, æt. 38 years, was admitted into the Pennsylvania Hospital October 12, 1888. About five or six years ago he had an attack of inflammatory rheumatism which confined him to bed for several weeks, and several years ago he had a chancre. He says he has always drunk a good deal of beer and ale, but whiskey only moderately. He has worked in quarries and on railroads, and was much exposed to wet and cold.

About eight months before admission he began to suffer with pain in the small of the back, and this extended around often into the flanks. The pain was most severe during the night, and he had frequently to get out of bed, when he would warm his back at the stove, this affording him relief so that he could sleep again. He had some dyspnœa on

exertion, and five or six months before coming to the hospital was obliged to give up work. He lost a good deal of flesh.

On admission the urine was normal. Physical examination gave the following results: There is a good deal of visible pulsation of the superficial arteries, and the whole præcordial area exhibits marked heaving pulsation. The apex beat is in the fifth and sixth interspaces slightly outside the nipple line. There is slightly increased percussion dulness over the cardiac region. At the apex of the heart there is a loud double murmur, but the sounds are almost inaudible; the murmurs are not much propagated toward the axilla. At the pulmonary region the first sound is distinct and a double murmur, the diastolic portion being much the louder. At the aortic area there is a loud double murmur, but the sounds are inaudible; the systolic portion of the murmur is louder above, and the diastolic below the aortic area. Both murmurs are distinctly audible in the carotid and subclavian arteries. The radial pulse presents the aortic character in moderate degree. Examination of the lungs, liver, and spleen reveals nothing abnormal.

The patient remained in the hospital for a good many months and was then discharged, but soon returned, and when I took charge, on August 1, 1889, he was an inmate of the ward.

*August* 21. A physical examination was made with the following results: There is great visible throbbing not only of the præcordial area, but of the whole chest and neck, and of the radial, ulnar, and brachial arteries, and beneath the outer third of the clavicles over the region of the subclavians. The cardiac impulse is felt to be very forcible and heaving, the apex being in the sixth interspace, three-quarters of an inch outside the nipple line. Vertical percussion one inch to the left of the sternum shows some dulness as high as the second rib, and that there is flatness in the third interspace. Transversely, at the level of the fourth rib dulness begins one inch to the right of the sternum, and extends across to the nipple (five inches). When the arm is elevated the radial pulse has distinctly the aortic character. At the apex the sounds are very muffled, and there is a prolonged murmur (probably transmitted from the aortic region). At the pulmonary area both sounds are distinguishable, and a double murmur. At the aortic cartilage two sounds are audible and a faint double murmur, the diastolic portion of which is much the louder; below, along the sternum, this becomes almost a roar. At the left edge of the ensiform cartilage (the tricuspid region) the sounds are very muffled, the diastolic murmur being loud, and the systolic faint. A double murmur is audible over the carotid and subclavian arteries.

*Lung* examination is absolutely negative, the breath sounds penetrating to the very bases posteriorly.

*Liver and Spleen:* Dulness not increased.

The double murmur is audible all along the spine and downward as low as the top of the sacrum, being especially loud at the mid-lumbar region.

At this time the following inferences were drawn from the study of the case: There is enormous cardiac hypertrophy with aortic regurgitation and obstruction, probably from stiffening of the leaflets. The mitral valve condition is doubtful, but nothing points to its direct involvement unless the rheumatic history.

*October* 12. A physical examination was again made and recorded, but it tallied in all essentials with that made in August.

18*th.* He had intense pain in the præcordial region, and an attack of syncope.

28*th* He died very suddenly at 4 in the morning.

*Autopsy.*—The abdominal and thoracic organs were all examined, but presented nothing worthy of note except the following: Upon opening the thoracic cavity both pleural sacs were found to be distended with liquid and clotted blood. This, when collected, had a weight of thirteen and a half pounds. The heart was enlarged by perhaps one-half, especially the left ventricle, the right side of the organ being only very slightly larger than normal. The mitral leaflets were pliable, and, hydrostatically tested, the valve was found to be competent. The aortic valve, when put to the water test, was found to leak. The leaflets were slightly thickened and stiff, and the opening a little narrowed. Between two of them adhesion had taken place and they were slightly puckered. The aorta, from the heart onward, was much dilated and very atheromatous, there being numerous calcareous plates upon its inner surface.

Just above the diaphragm was a sacculated aneurism of about twice the size of an ordinary orange. The aneurism had no true posterior wall, it being fast at the sides by inflammatory adhesions to the back of the thorax, and the last four dorsal and first lumbar vertebræ, which were bare and much eroded, lay within the sac directly in the blood-current. There was a large irregular tear in one side of the sac, from which the blood had escaped. The entrance of the aorta to and exit from the sac were peculiar; the vessel was interrupted for the distance of one and a half inches, and the ends, at the points of entrance and exit, were sharp, as if they had been cut off.

From the standpoint of pathology the case presents no extraordinary

conditions, unless it be conceded to be extraordinary in view of the prevailing modern opinion of the influence of microörganisms in the production of almost all processes of destruction and of septicæmic conditions, that there should have been such extensive bone destruction going on actually in the arterial blood stream, and yet that no single symptom in any way resembling septicæmia should ever have occurred.

From the clinical side, however, the case presents several points of considerable interest which are very instructive. The patient was in the hospital, except for a short interval, for more than a year, yet the diagnosis of aneurism was never reached; the possibility of its existence was not even alluded to in any of the records.

This was due, doubtless, to the presence of aortic regurgitation, which afforded an explanation apparently adequate to account for all the symptoms. It is generally conceded that aneurism of the posterior descending portion of the aorta is more likely to escape recognition than of any other part of the vessel; it lies so deep in the chest, covered by the lungs and heart in front and by the thick bony and muscular walls of the chest posteriorly.

For my own part, I was never satisfied or comfortable in the diagnosis of aortic regurgitation alone, and often spoke, when studying the case in the ward, of the possibility of the existence of aneurism. My suspicions were based upon the history which the man gave, and to which he consistently adhered, of the great pain in the back radiating around the chest, and of the loud murmur audible when the stethoscope was placed over the spinal column. It is of interest to note that the degree of regurgitation and cardiac enlargement was by no means so great as would have been inferred from the physical signs, the aneurismal pulsation, probably by transmission, making it seem that the hypertrophy was greater than it was, and the loudness of the regurgitant murmur being in some way exaggerated by the aneurismal sounds.

I have nothing further to add except the statement that I never study such a case but it takes me back again to the thought how vastly important are chronic endarterial changes such as found in this man's body. They were certainly the predisposing cause of all he suffered and of his death. Whether we choose to attribute the chronic endarteritis, which allowed the aneurismal dilatation to occur, to the attack of rheumatism, or to the chancre, matters little; for without the endarteritis he would never have had the aneurism. In many parallel cases there is history neither of rheumatism nor chancre to account for such conditions, and the inference seems to me a fair one that they often creep upon people without any attack of acute illness, and therefore without any

known cause except the slow and insidious changes generally called atheroma.

Dr. J. Daland: I think that it is rather uncommon to find aneurism involving the particular portion of the aorta affected in Dr. Meigs's case. The erosion of the vertebræ calls to mind a case of abdominal aneurism which I exhibited about two years ago in which two of the vertebræ were eroded almost through to the spinal cord.

A study of the frequency of aneurism in this country as compared with Austria, would, I think, be of interest as bearing upon the etiology. The difference between the two countries is certainly very marked. Here it is not uncommon to meet with aneurism of some part of the aorta; there it is a decided rarity. At the general hospital of Vienna, I was told by the pathologist that in one year they saw not more than five or six cases of aneurism of the aorta in some eighteen hundred autopsies. Some have suggested that it is due to the indulgence in whiskey and brandy in this country, while in Austria beer is the more common beverage. Whether or not syphilis has anything to do with this difference is a difficult question to settle. This difference in frequency is, however, a fact, and is deserving of special study.

Dr. A. V. Meigs: As regards the relation of syphilis to aneurism, I heard Hebra say that there were no people so syphilitic as the Polish Jews. I do not think that it is generally considered that the Americans and English are peculiarly syphilitic, while the Germans are. For my own part, I think that the assumption that aneurism is due to syphilis is a point that has never been proven. I do not think that we see a case in an elderly man unless there is disease of the arteries, and I do not think that the connection between syphilis and that kind of disease of the arteries is in the slightest degree established.

Dr. H. F. Formad: There is no doubt that syphilis has a great deal to do with atheroma. There is no doubt that we cannot have aneurism without atheroma. In this way I think that syphilis probably plays a prominent *rôle* in the production of aneurism.

Dr. Daland: Personally, I am of the opinion that syphilis is more prevalent in Austria than it is in this country. We should therefore expect, other things being equal, that the number of cases would not be decreased. There are other factors to be considered. Perhaps over-exertion is not so frequent there. This, in connection with the fact that they do not use strong alcoholic liquors, may serve to explain the difference. One of the most marked specimens of aneurism that I have seen occurred in a man without syphilitic history, but who had been in the habit for three years of taking a pint of alcohol daily. The aneurism

involved the aorta, and was of the dissecting variety, and ruptured into the pericardial sac.

Dr. J. M. Baldy: If the use of alcohol is an etiological factor in the production of aneurism, we should expect this condition to be common in Scotland and Ireland. Does anyone know whether or not this is the case?

Dr. Meigs: Aneurism is said to be very common in Scotland.

Dr. G. G. Davis: Admitting that aneurism is more frequent in America, rather than attribute it to the prevalence of syphilis or intemperance, I have been inclined to think that it was due to the industry and activity which is characteristic of the American nation, causing increased arterial action. I certainly think that it is quite as probable that such would be the cause as that syphilis or alcohol would be. *February* 27, 1890.

---

### 7. *A case of thoracic aneurism.*

Exhibited by Dr. J. F. Berlet.

The patient from whom this specimen was removed was a German, æt. 50 years, and a tailor by occupation. Twenty-five years before he came under observation, he had a chancre which, from the history, was evidently syphilitic.

He was, however, in good health until two years before death, when he began to suffer from dyspnœa on slight exertion. This would occur in paroxysms, and sometimes was so severe as to compel him to quit work. On examination I was unable to detect any heart murmur, thrill, or bruit. Dr. Pepper saw the case in consultation, and agreed with me that the only thing that it could be was an aneurism, but failed to detect any thrill or bruit. A year later Dr. Pepper again saw the case, and thought that he detected a bruit. During the last year there was evidence of compression of one bronchus, producing a blowing murmur. There was also extreme discoloration of the skin, suggesting Addison's disease. The man died rather suddenly.

The specimen shows an aneurism involving the transverse and descending portions of the arch of the aorta. There was no disease of the supra-renal capsules.

This man never touched whiskey, and took very little beer; he never hurt himself by hard work. *February* 27, 1890.

8. *Mitral and aortic disease, with splenic infarction.*

Exhibited Dr. H. M. Fisher.

William B., æt. 34 years, single, weaver, was admitted to the Episcopal Hospital, under my care, November 11, 1889.

The patient had been in the hospital during the previous winter, and had been discharged in the spring or early summer much improved. During the summer he had been able to do some work at his trade, but for the last few weeks had had so much dyspnœa upon slight exertion that he had been obliged to give up all work.

Family history unimportant. His own health had been good until five years before his admission to the hospital, when he had an attack of acute articular rheumatism. One year later he began to have slight pain in the region of the heart, with attacks of palpitation and dyspnœa upon exertion. The dyspnœa had steadily increased, and during the preceding winter œdema of feet and hands had set in. He noticed then that there was increased frequency of micturition, and that there was marked diminution in the amount of urine voided.

Upon admission the patient was extremely anæmic, and there was marked œdema of the feet, legs, and scrotum; there was much dry cough and orthopnœa. Respiration 32; pulse 97, and of the Corrigan character.

A harsh presystolic murmur was heard at the apex, followed by a softer systolic murmur, and a bellows murmur was heard over the aortic cartilage. Both the systolic and the diastolic murmurs are transmitted into the carotids. There was a good deal of irregularity about the cardiac action.

Micturition frequent, and during the first twenty-four hours after his admission only twenty ounces of urine were passed, of a specific gravity of 1015. The urine was light in color, alkaline, and contained much albumin and a few hyaline casts and bladder epithelium.

He was ordered Epsom salts, half an ounce daily, whiskey, and carbonate of ammonia and ten minims of tincture of digitalis every four hours.

*November* 13. Dyspnœa diminished and slept better than he had done for some time. Urine thirty-three ounces.

15*th*. One hundred and three ounces of urine voided. Some ascites, but no œdema of the extremities; dyspnœa very much relieved.

16*th*. Urine measures ninety-nine ounces, and the patient having

now taken five drachms of the tincture of digitalis, it was now ordered in twenty-drop doses three times a day.

22*d*. Amount of urine voided in twenty-four hours amounted to forty-seven ounces, which was almost, if not quite, free from albumin.

On the 23d, his evening temperature was 102°, and he had, I think, some joint pains, and a little increase in cough and dyspnœa. His temperature after this showed a daily fluctuation of about 2°, never rising, however, above 102°, until the 29th, when it became normal. Some days later he was able to get up, and for several weeks I saw him about the wards.

About January 13th he began to suffer a good deal again from cough and dyspnœa, and on the morning of the 20th took to his bed on account of the difficulty of breathing and pain over the region of the heart. Dyspnœa steadily increased until half-past eleven o'clock of the same night, when he died.

I am indebted for the above notes to Dr. Francis Rudderow, resident physician.

*Autopsy*.—The heart hypertrophied and left ventricle much dilated. Very large and partly organized clots were found in the right auricle, and in the pulmonary artery.

The aortic valve incompetent, and its cusps extremely rigid and covered with vegetation; those on the anterior aortic cusp extending fully one-quarter inch into the ventricle, and imbedded in this vegetation was a reddish mass resembling blood-clot one-eighth of an inch in diameter.

Mitral valve, button-hole in shape; its membranous curtains thickened and their upper edges roughened by vegetations. It was contracted to such an extent as not to admit more than one finger with ease.

Both lungs intensely congested and œdematous.

The right kidney showed a cicatricial depression one-fourth of an inch deep at its upper inner third, and another well-marked depression at the middle of its inner surface. The tissue of the kidney firmer and lighter in color under these depressions, and it was evident that there had been old embolic infarctions of the organ at these points.

Spleen divided transversely into two almost equal lobes, which are nearly, if not altogether, distinct and separate. A supernumerary spleen one and a quarter inch in length was loosely attached to the lower surface of the organ.

On the upper convex surface of the spleen was an infarction two and a half inches wide at the base, and the apex of the cone extended a little

more than an inch vertically downward into the substance of the organ. Two other smaller infarctions were seen on the upper inner surface of the spleen, the larger of these causing a distinct yellowish-white mottling of its surface. *March* 13, 1890.

---

9. *Cardiac hypertrophy; cardiac valvular disease; pulmonary infarctions.*

Exhibited by Dr. J. Leidy, Jr.

This specimen was removed from a patient admitted to the Pennsylvania Hospital a few weeks ago. He had been ill for six months, although previously in perfect health. The patient thought that his trouble had been brought on by a contusion of the chest. When admitted he was jaundiced, had general anasarca, and complained of extreme dyspnœa and pain over the præcordial region with palpitation. The apex beat of the heart was in the mid-axillary line in the seventh interspace. There were a few rales at the bases posteriorly. There was also evidence of slight consolidation. For the first twelve hours the expectoration was purely mucus. He then began to expectorate blood. In the course of a day the general condition improved. The œdema of the lower portion of the body had disappeared to a considerable extent, and in another day the expectoration, although profuse, contained but a small quantity of blood. Four days after admission he was, according to his statement, better than he had been for months. That evening he suddenly became unconscious, cyanosed, and died in a few minutes.

The post-mortem showed that the heart weighed thirty-two ounces, with old disease of the aortic valve and some of the mitral. There was an immense white clot in the right ventricle extending into the pulmonary artery. The bases of both lungs showed recent hemorrhagic infarcts, wedge-shaped, with the apices toward the roots of the lungs. The kidneys were enlarged and in the second stage of chronic parenchymatous nephritis. One kidney contained two cysts. The cortex of the kidney was somewhat contracted. The liver was enlarged and fatty, and presented a long biliary duct, measuring four and a half inches. The cystic and hepatic ducts were normal. There was no obstruction. The mucous membrane of the intestine was greatly congested. About the position of the pylorus the condition looks almost like hemorrhagic infarcts.

I call attention to these specimens principally on account of the size

of the heart and the presence of these infarcts. The spleen, kidney, and liver showed no infarcts and there were no petechial spots on the skin.

*March* 13, 1890.

---

10. *Pericardial hemorrhage from a dissecting aneurism.*

Exhibited by Dr. H. F. Formad.

The specimen is one of pericardial hemorrhage from a dissecting aneurism. These cases are common in laboring men. The aneurism is very small. It commenced at the ascending part of the aorta, between the latter and the pulmonary artery.

Dr. J. Daland: In connection with this specimen, I should like to refer to one that did not occur in a laborer. The patient was a saloon-keeper who for five or six years had been in the habit of drinking from one to one and a half pints of whiskey daily. He had ordinary Bright's disease and died suddenly. At the autopsy a dissecting aneurism was found which began about half an inch above the aortic valve and had continued up past the innominate and then into the aorta. Between these two openings the break occurred into the pericardial sac, causing death. In this case exertion played no part. *March* 13, 1890.

---

11. *Pericarditis in the elephant.*

Exhibited by Dr. Laplace.

About three weeks ago I was summoned to go out to Forepaugh's winter-quarters to see a dead elephant. The animal had been brisk and apparently well the day before. The animal was 15 years old, and the heart weighed 23 pounds. The abdominal organs were found to be normal. Opening the pericardial sac, I found a gallon and a half of fluid. On removing the heart I found all around the left ventricle below the visceral pericardium a great deal of effusion. I was much interested in the presence of this post-mortem heart-clot. It is a thick, India-rubber, fibrinous-like clot and shows how much more dense the fibrin is in the elephant than in man. There is a peculiar musk odor to

the tissues of this animal. The tissues I found to be of an India rubber-like consistency.

I have here also the testicle of the elephant. I was surprised at its small size and also at its location. The testicle is situated below the kidney on the outer side of the psoas muscle. *March* 27, 1890.

---

12. *A case of pyo-pericardium in which drainage produced an imperfect cure.*

Exhibited by Dr. C. WALTER.

The case is of interest because it had been mistaken for empyema, the mistake not being recognized until the post-mortem. On admission to the Philadelphia Hospital pleural effusion was diagnosed and the hypodermic syringe removed pus. The chest was much fuller on the left side than on the right. The respiratory excursions were confined to the right side. The intercostal spaces on the right side were filled out. There was no vocal resonance or fremitus below the third rib on the left side, and this region was flat on percussion. Posteriorly the flatness extended to a line corresponding to the inner edge of the scapula. The auscultatory sounds corresponded with the other signs.

About a week after admission, a diagnosis of local empyema having been made by Dr. Bruen, in whose ward the patient was, and the diagnosis being confirmed by several physicians, the chest was aspirated and a drainage-tube introduced. The man improved and the septic temperature lessened, but a month after the operation the patient became worse, the temperature became septic, and anasarca set in. This was peculiar, inasmuch as both arms and legs were involved, and the left side of the body, head, and neck. After about two months the man died, without having shown any cardiac symptoms, the heart being in its normal position, the sounds clear and distinct, without murmur.

The pericardium was found adherent to the heart throughout. On the inner side of the heart was a large pus cavity. This was entirely separated from the old cavity, which had entirely closed after drainage. The general opinion is that organization is prone to occur in purulent effusion, and therefore loculation is not infrequent; if this is the case, we should operate at the earliest possible moment in cases of purulent pericarditis.

Dr. J. B. Deaver: I have operated once in a case of large purulent

effusion in the pericardium. The diagnosis was made by Dr. Musser and Dr. Pepper. I simply opened the cavity and introduced the drainage-tube. The patient did well for a while, but the heart muscle was ultimately attacked and a collection of pus formed posteriorly to the heart, which did not seem to communicate with the main sac in which the drainage-tube was placed. I do not see how it would be possible to determine that such a collection of pus existed, and if it were diagnosed, I do not see how it could be reached. In this case the opening was made in the fourth intercostal space one inch to the left of the sternum. The operation itself is not attended with any great danger. The points to be attended to are not to injure the internal mammary artery, the diaphragm, the left pleural cavity, or the heart muscle. The patient on whom I operated succumbed two weeks after the removal of the drainage-tube from myocarditis. *March* 27, 1890.

---

13. *Aortic stenosis and cardiac hypertrophy.*

Exhibited by Dr. J. Daland.

The patient from whom this specimen was removed was seen December 24, 1889, complaining of shortness of breath and marked pulsation in the cardiac region. He was intensely nervous, having recently lost his wife suddenly from heart disease. The gentleman continued under my care from that time until his death, three weeks ago. In the middle of January he acquired influenza. There was considerable engorgement of the lungs, from which he finally recovered. During that time he developed quite well-marked Cheyne-Stokes breathing. He was able to be about, but was unable to walk more than three or four squares. He had found by experience that a short residence in Atlantic City gave him considerable relief. He showed no œdema and was doing well, when I was hurriedly summoned to Atlantic City and found him suffering with acute heart-failure. The heart was acting irregularly and the Cheyne-Stokes breathing had returned. This continued four days, at the end of which time he died rather suddenly.

Dr. Burr assisted me in making the autopsy, and has made sections of the heart, liver, and kidney. The heart weighed thirty-two ounces and is a typical example of aortic stenosis. The organic disease of the heart had been diagnosed twenty years ago, and the prognosis made

that the man would die suddenly in a short time. This had a good deal to do with the production of his nervous condition. The most careful search failed to reveal any reason why this man should have aortic disease; he had never suffered from rheumatism, nor had he had any of the infectious blood diseases. The liver showed the ordinary nutmeg appearance, but the other organs showed nothing of importance.

Dr. F. P. Henry: Sudden death is by no means a frequent termination of heart disease. I believe that it occurs principally in only two forms, aortic regurgitation, and a true angina pectoris due to atheromatous constriction of the coronary arteries, the form of angina pectoris first described by Heberden. There was regurgitation in this case, however, and whether this association with stenosis would have any tendency to modify the prognosis of sudden death, I do not know. I am not aware that this question has been considered. This case is of great practical importance, perhaps more from a pathological than from a clinical point of view.

In regard to Cheyne-Stokes respiration, I have sometimes discovered it in old hospital patients, and I have been at a loss to tell when it showed itself. I recall the case of an old woman during my last term of service at the Philadelphia Hospital, in whom the resident discovered it, and it continued for a considerable length of time. At her death there was nothing found to account for it except great dilatation of the first part of the arch of the aorta, which had shown itself by great pulsation. In connection with this case I looked up the literature of the Cheyne-Stokes breathing, and I would say for the benefit of those who wish to study this matter that there is no better article than one written by a former president of this Society, Professor Pepper, which appeared in the Philadelphia *Medical Times* ten or more years ago.

Dr. James Tyson: From my own experience I think almost all cases of sudden death from heart disease, outside of those from atheroma of the coronary arteries, have been of aortic disease such as Dr. Henry referred to. Although we may sometimes make a mistake in not realizing the prognosis which we make in these cases, it is as well to make it, as sudden death is of frequent occurrence, and having informed the family one saves himself the opprobrium of a mistaken prognosis.

Dr. Daland: In regard to the duration of heart disease and sudden deaths in such troubles, it may be of interest to state that this man's wife, who was under the care of a homœopathic physician, consulted me in regard to another member of the family, and at the time I observed very rapid breathing and slight cyanosis. I told the woman that she had better go home and go to bed, but she said that her physician told

her she was doing very well. She left me and went to Chestnut Street to visit her husband, and while conversing with him dropped dead at his feet; and I attribute the death of this man in large measure to the shock of this occurrence.

In regard to Cheyne-Stokes breathing, I may say that I have had only three cases, and they have all been in cases of cardiac disease. One was acute dilatation, another organic valve disease, and a third was this case. All these cases died, but I know of one case in which recovery ensued. *April* 24, 1890.

---

14. *Enlarged heart in a case of aortic regurgitation with stenosis.*

Exhibited by Dr. S. Solis-Cohen.

This heart weighs thirty-three ounces. The patient was a male, æt. 44 years. There was marked pulsation of the arteries throughout the body. One interesting clinical feature is that although I have been unable to discover any mitral obstruction, there was during life a distinct presystolic murmur. I think that Austin Flint was the first to call attention to the fact that in aortic regurgitation we have a mitral presystolic murmur. He explained it by the blood regurgitating from the aorta into the ventricle, when the current should be from the ventricle into the aorta. In this way the mitral valves are floated up, producing a mechanical obstruction and developing a presystolic murmur. This symptom was not constant and was not accompanied with a thrill. The apex beat was heard in the axilla. *April* 24, 1890.

---

15. *Aneurism of the heart.*

Exhibited by Dr. H. F. Formad.

I will pass around a heart, of the history of which I know very little. The man was in the habit of going on sprees and then not drinking for a long time. The specimen shows an anatomically unique condition of the wall of the left side of the heart. There is an aneurism with calcification. The aneurism is as large as half an apple. The whole of the muscular tissue is absorbed. There is a calcified mass on one side.

The man from whom this heart was removed was 60 years of age and quite active, and had never complained of any sickness.

Dr. F. Packard: It seems to me that this heart is poorly nourished. The coronary arteries are atheromatous. I do not see why this condition might not result from brown atrophy due to want of blood in that part. That would explain it better than endocarditis.

Dr. Coplin: I have a specimen somewhat resembling that of Dr. Formad. It was removed from a young colored girl found dead in bed. The heart had a hole in it as large as a five-cent piece. Communicating with the left ventricle was a small aneurismal dilatation half the size of a hen's egg. This had ruptured and the pericardium was full of blood. This was near the apex. There was no calcareous deposit.

*April* 24, 1890.

---

### 16. *Pseudo-leukæmia.*

Exhibited by Dr. J. Daland.

This case is worthy of attention in the first place because of the rarity of the disease; in the second place, because it is apparently of no longer duration than four months. It is rare that one sees the specimens so early in this disease. It is also of interest that we had the development of acute hemorrhagic nephritis without apparent cause, unless it is assumed that the patient had an attack of influenza at the time of his admission, and that this was the cause of the renal trouble. The kidneys have been examined for evidences of a mycotic origin of the trouble, but with negative results.

Discussions have recently taken place with reference to the essential nature of pseudo-leukæmia as contrasted with true leukæmia. I agree with Dr. Henry that these two diseases are essentially one and that the difference in microscopical appearances of the blood is not sufficient to erect two separate and distinct diseases, inasmuch as the clinical history, morbid anatomy, and the microscopic examinations in the two diseases are the same. The diseases are practically the same as regards prognosis. The only great difference is that in Hodgkin's disease the spleen as a rule does not reach the size that it does in leukæmia. With this slight exception, there is practically no difference between the two affections.

Dr. F. P. Henry: The case reported by Dr. Daland seems to be a genuine example of the disease which has been known by many names, as Hodgkin's disease, pseudo-leukæmia, malignant lymphadenoma, etc. The widespread enlargement of the lymphatic glands, the enlargement of the spleen, and the grade of the anæmia would all tend to corroborate the diagnosis made by Dr. Daland. I have nothing special to add except, perhaps, with reference to the relation of this disease to genuine leucocythæmia, and I shall merely say under that head that the more I reflect upon these two affections, the more am I convinced that they are different stages of the same disease, as I argued in a paper on this subject read two years ago. Since reading that paper I have obtained the records of two additional cases which showed a transition between these two affections. At that time I could only refer to two cases in which the blood, without an abnormal number of leucocytes, became crowded with them previous to death. I sent a copy of this paper to various persons interested in this subject, and among others to Professor Senator, of Berlin. In return he sent me a pamphlet of his own containing the report of two cases which I had overlooked. These patients were twins and were attacked with all the symptoms of pseudo-leukæmia, but shortly before death developed the symptoms of leukæmia. The ages of these patients were not given, but they were nurslings; neither is the sex noted. In the course of two months from the first appearance of the pseudo-leukæmic symptoms, genuine leukæmia developed and the children died.

In reference to the pathogenesis of this affection: It certainly possesses all the characteristics of malignancy. It begins almost invariably with local gland swelling and tends to involve all the glands of the body. The glands are not involved successively in the order of their anatomical arrangement. The infective material, if any is concerned, is conveyed by the blood, and not by the lymph channels as in carcinoma. This is important in the diagnosis. Other conditions from which this disease is to be distinguished are scrofula, sarcoma, and leukæmia. The latter is differentiated by the examination of the blood. The disease is distinguished from scrofula by the mobility of the glands. In scrofula the glands are welded together. In sarcoma also the same is true. In carcinoma the gland involvement is almost always secondary to affection of some glandular organ not lymphatic.

The only thing that remains to be said is with reference to treatment. The propriety of the removal of groups of enlarged glands should be considered, for in a number of cases the glandular tumor has remained

indolent for several years, and then, without warning, other glands have become involved and the affection has become general.

Dr. J. P. C. Griffith: I hardly know where to begin without saying too much upon this subject. I have had occasion in the last six months to pay a good deal of attention to diseases of the blood, especially as occurring in children. The whole subject seems to be unsettled, and the distinction between these diseases seems to be uncertain. I fully realize the force of those cases which have been reported in which a transition seems to have taken place. A case is reported by Moser in a comparatively recent number of *Virchow's Archives* in which a boy had had lymphatic anæmia and in which the leukæmic character of the blood was added to it. I am familiar with the cases of Senator.

I recently saw a case which has some bearing upon the relation between these conditions. This was a patient under the care of Dr. Gibb, whose blood I examined twice and on whom I made the post-mortem. The man commenced with enlargement of the inguinal glands, contrary to the usual course of lymphatic anæmia. The enlargement spread to other glands, extending upward instead of downward as usual. It involved the glands of the abdominal cavity and the retro-peritoneal glands, forming large masses along the aorta. The axillary glands were not much enlarged nor were the cervical glands much affected. The characteristic of this case was the huge size of the spleen. The percussion limits extended from the nipple to the crest of the ilium and transversely from within one inch of the umbilicus to the region of the back. The spleen was fully as large as it is seen in leukæmia. If this condition of the spleen were more frequently seen we should be still more in doubt about the relation of lymphatic anæmia to leukæmia. As long as we know as little as we do about the cause and nature of these diseases, it is impossible for us to reach any positive conclusion as to their relation. I cannot but feel that there are reasons for regarding lymphatic anæmia and leukæmia as independent diseases. There seem to be more differences than simply the character of the blood. It is true that there are cases which show a transition, but these cases are rare and hardly numerous enough to constitute actual proof of the unity of the two diseases. The fact that the spleen in lymphatic anæmia is almost invariably so much smaller than in leukæmia is a point to which some weight should be attached. It does look as though the leukæmic condition of the blood was simply a circumstance which might be present or absent. Leaving that out of the question, there seem to be distinct differences in the two conditions. I have called the disease lymphatic anæmia, yet it is important to remember that in the early stages at least,

the blood is very little affected. A patient was sent to me some months ago with the cervical glands enlarged. A diagnosis of lymphatic anæmia had been made by Dr. Mitchell. Examination of the blood showed 5,900,000 corpuscles to the cubic mm., while the proportion of hæmoglobin was about 90 per cent. There was at least no anæmia, but it almost always happens that as the disease goes on decided anæmia develops. In the patient of Dr. Gibb to whom I have referred, the corpuscles numbered 2,000,000, with hæmoglobin in proportion.

The condition of the kidney in Dr. Daland's case is interesting and, I should think, rather unusual. There was a case reported by Goodhart, in which there was hæmaturia in a child, æt. 6 years. I do not know what was the condition of the kidney.

The treatment is of course not very promising, yet I think that it is better than in leukæmia. Cases have recovered, whereas in leukæmia recovery is of great rarity.

Dr. J. B. Deaver: I have listened to this discussion with pleasure, from the standpoint of the surgeon. I frequently have these cases referred to me for an opinion as to the propriety of an operation. Unless the enlarged glands are occasioning pain or a certain amount of discomfort, I never advise removal. If there is any doubt in my mind, I refer them to those who are better able to judge as to the exact pathological condition.

I recently had a case of enlarged glands at the side of the neck. The patient was anæmic and insisted upon operation. I refused upon the ground that the enlargement was the result of Hodgkin's disease. I have in some cases been persuaded to operate, but in almost all instances after a sufficient time had elapsed, I was sorry that I had interfered.

I was particularly struck with the point made by Dr. Henry in regard to the mobility of the glands in Hodgkin's disease as contrasted with scrofulous and sarcomatous disease. This I have observed in cases that I have seen. In one case sent to the German Hospital for operation, I persuaded the lad not to be operated upon unless the glands became painful. The glands most enlarged were seated in the right armpit. In the course of a month one of the glands showed signs of beginning inflammation. I removed this gland, and when I got into the axilla I found the three chains of glands much involved. The boy made a very favorable recovery from the operation. Six months later he returned with the axilla presenting almost exactly the same appearance as at the time of operation. He insisted upon having the glands removed. I referred him to Dr. Curtin, and he is now under treatment.

Dr. H. F. Formad: There seems to have been this year an unusual

number of lymph tumors of the neck and axilla. I have at no time received more specimens of removed lymph glands than I have this year. In ten years I have not received as many as in the past six months. From the University Hospital, I have had about five sets of glands. Dr. Carpenter, of Pottstown, has sent me two sets, one from the axilla and one from the neck. Dr. Gross, of Camden, has sent me a large mass of glands. Dr. Albright, of Muncy, has sent me some specimens. I would ask those familiar with lymph enlargements to throw some light upon this increased frequency and state whether they think that these glands have anything to do with leukæmia or pseudo-leukæmia. They are not scrofulous glands. They are pure hyperplasias and all from young persons.

I should like also to hear something said in regard to lymph sarcoma. I believe that lymph sarcoma affects only one gland and extends by metastasis to structures other than lymph glands.

Dr. F. P. Henry: I think that under the microscope there is no distinction between lymph sarcoma and this form of glandular enlargement that we are considering. Clinically the difference is well marked. It is from the clinical standpoint alone that the diagnosis can be made. The latter is characterized by enlargement, more or less general, of the lymph glands, enlargement of the spleen largely due to hypertrophy of the Malpighian follicles, and a pronounced grade of anæmia although not often profound. The number of corpuscles is rarely more than 50 per cent. below normal. This is quite a point as contrasted with pernicious anæmia and certain forms of leukæmia, if there is any distinction to be drawn between these affections.

I think that there is a tendency to make light of the increase in the number of leucocytes. I think that this is not a trifling matter; it is not in its results. It leads to hemorrhages in various parts, especially in the retina by blocking up the capillaries. This obstruction in connection with malnutrition of the vessel walls from anæmia leads to hemorrhage, so that practically the accumulation of leucocytes is a very important matter and one not to be cast aside as a practical ground of distinction. I think at the same time that it is a stage which may be attained by this affection.

The reason why the transition of this affection to leukæmia is not oftener observed is, I think, to be attributed to two or three causes. In the first place, the blood is not often enough examined. In the second place, the transition requires considerable time and the patient is apt to die in the lymphatic anæmic stage of the disease. The fact is often

overlooked that one observer sees the case in the early stage and another sees the patient in the leukæmic stage.

I think that if Dr. Deaver errs at all, it is upon the side of conservatism. At the same time I think that apart from any question of disfigurement, it may be well in some cases as a prophylactic measure to remove the glandular tumor. The points against the operation are the fever, but principally the high grade of the anæmia. General glandular enlargement would also contra-indicate the operation. Where the glands threatened life or the nutrition of the patient by pressure, I think that it would be well to remove them if possible.

Dr. H. F. Formad: I have had two or three specimens sent to me of enlarged glands reaching the size of the fist. I recently had one such specimen sent to me apparently involving only one or two glands. Inquiry elicited the information that there were no other enlarged glands. Under the microscope these glands did not show the normal structure. There was distinct sarcomatous destruction of the reticulum. There was complete obliteration of the lymph sinuses. These are easily brushed out in the normal gland and in leukæmic glands. In this class of cases there is complete absence of all this. The whole gland is transformed into a sarcomatous tumor. A number of years ago I studied with Dr. Simes some cases where the lymph gland presented tumors which would leave the boundaries of the gland itself. I would like to know whether these so-called lympho-sarcomata have relation in any way with leukæmia or Hodgkin's disease.

Dr. J. P. C. Griffith: I think that there is a difference between lymph sarcomata and these glands. There is no difference between the glands in leukæmia and lymphatic anæmia. In lympho-sarcoma there is a true sarcoma of the lymph glands. In the other conditions the glands remain simply hyperplastic lymphatic glands.

Dr. Daland: I think that Virchow has called these glands lymph sarcoma. I think also that in the beginning of this disease the change in the glands allows the preservation of lymph spaces, and as the disease progresses the glands may be like a true sarcoma.

The point that Dr. Griffith makes in reference to the rarity of cases of pseudo-leukæmia eventuating in true leukæmia is a good one, but the point that Dr. Henry made, and which has been made by others, that these cases are not followed closely and that frequently no count is made of the blood corpuscles for some time before death, is also a good one. I think that these glands should be removed early, when that is possible. But it is not always easy to do so.

I might add that I saw a second case of Hodgkin's disease this winter

in a man about forty or forty-five years of age. In this respect the case was peculiar, as this disease occurs generally in the young. He had enlargement of the cervical, axillary, and I think also the inguinal, glands. This man had a spleen also of considerable size. The blood count gave 4,000,000 corpuscles; and the pigment was in proportion to the blood-cells.

I should like, if it is possible, to have an explanation why this man should develop acute hemorrhagic nephritis while in the hospital and while in bed with no exposure to cold or any other cause which might produce this disease. *May* 8, 1890.

---

17. *Aneurism of heart.*

Exhibited by Dr. W. M. L. Coplin.

I have here a specimen of aneurism of the heart. The only knowledge that I have of it is that it was removed from a healthy colored girl. She was found dead in bed, and was supposed to have been murdered. This aneurismal sac was found, which had ruptured into the pericardium, and this was filled with blood. The aneurism is of the size of a small apple, and communicates with the left ventricular cavity by an opening about the diameter of a five-cent coin. *May* 8, 1890.

---

18. *Two specimens of chronic endocarditis.*

Exhibited by Dr. H. F. Formad.

At the last meeting I showed this heart, which was removed from a man, æt. 60 years, who died while on a spree. He was not a steady drinker, but occasionally went on sprees of a few weeks' duration. Of recent years he had become addicted to the use of chloral and bromides. He had never complained of any bad feelings. The heart presents an aneurism of the left ventricle, with complete atrophy of all the muscular walls and only the endocardium and pericardium intact. There is also distinct calcification of the whole of the wall of the aneurismal sac. The valves are in moderately good condition, with no

atheroma of the aorta. The kidneys were normal, with the exception that they were the cyanotic kidneys of the alcoholic type. One kidney had a deep scar, which was either syphilitic or due to an old hemorrhagic infarct. There was also infarct of the spleen.

Here is a heart which I removed a month ago. There is considerable dilatation of the organ as the result of chronic endocarditis. There must have been ulceration, probably an ulcerative endocarditis. It is in the position which is said to give rise to aneurism of the heart.

*May* 8, 1890.

---

19. *Dissecting aneurism.*

Exhibited by Dr. H. F. Formad.

Here is an interesting specimen of dissecting aneurism. The aneurism had dissected its way down into the thoracic aorta to about the line of the sixth rib. The aneurism did not burst into the thoracic cavity, but there was a large hemorrhage into the pericardium. This man was 55 years of age, and had been engaged as a janitor. Losing his position, he went to work at street-paving. After working two days, he gave it up on account of pain in the chest. In a day or two he was dead. It is evident that the rupture was due to the unaccustomed heavy work, and that during the two days there was gradual dissection of the blood between the muscular coat and the adventitia, which gradually extended, causing death. *May* 8, 1890.

---

20. *Aneurism of arch of aorta; ulceration of trachea.*

Exhibited by Dr. A. F. Müller.

The notes from the case are as follows: H. B., æt. 45 years, a soldier, while on drill at Fort Niagara thirteen months ago, was seized with an obstinate cough, for which he was treated for over six months while still doing duty. After that he was able to do duty occasionally only, and three months ago became totally disabled, and was in the Post Hospital at Fort Niagara for two months prior to August 20, 1890, when he came to Germantown to die with his people. Was four days at the University Hospital. When first seen had very harassing cough and

great dyspnœa, both greatly aggravated by lying down, or even by reclining. Could only rest in the sitting position, leaning forward with his head on a table.

All physical signs were marked by coarse, loud bronchial and tracheal râles, and a critical diagnosis at the time was impossible. Expectorated copiously greenish-yellow purulent sputum, tinged with blood. Patient died on September 9th.

*Autopsy, thirty hours after death.*—Thorax only opened. Both lungs at their bases strongly adherent, especially the left lower lobe. Apices of both lungs crepitant and in fairly healthy condition, but the lower lobes of both lungs were infiltrated and purulent.

The pericardium contained about two ounces of clear serum. Heart somewhat flabby. The arch of the aorta was found to be the seat of a large aneurism, the pressure of which upon the trachea had caused the great dyspnœa of the patient.

One of the bronchial glands had ulcerated into the trachea.

Dr. James Collins: I have seen several such cases in which the wall of the trachea had yielded from pressure, causing absorption, while the wall of the aneurism seemed to be able to maintain its integrity. The walls of the trachea may become thinner and the glands ulcerate through, and yet the wall of the aneurism remain intact, and there is no escape of blood.

Dr. Ernest Laplace: The ulceration seems to result from the compression of a fibrinous clot. A large part of the tumor consists of laminated fibrin, which has been gradually deposited as a result of nature's attempt to cure the aneurism. This firm, hard clot has acted mechanically, making compression and causing the ulceration. There is a deposit of at least an inch between the ulcerated point and the cavity of the aneurism, and that distance is filled by a hard mass of fibrin.

*September* 25, 1890.

---

21. *Anomaly of the heart.*

Exhibited by Dr. H. F. Formad.

Dr. Formad presented, by the favor of Dr. Brooks, a heart showing right-sided disease. The tricuspid valve leaflets were thickened, insufficient, and the right ventricle dilated. The foramen ovale was patulous; there was no right-sided hypertrophy. The specimen was removed

from the body of a young person who is stated to have had a history of rheumatic affliction.

The peculiarity about this specimen, however, was the existence of an anomalous arrangement of the valves at the orifice of the pulmonary artery. There were but two leaflets, and these both were fenestrated, and were provided with slight chordæ tendineæ, thus causing a marked similarity to the construction of the tricuspid or mitral valve.

*November* 13, 1890.

---

22. *Specimen of mitral stenosis.*

Exhibited by Dr. F. P. Henry.

The autopsy at which this typical specimen was obtained was made on July 1, 1889. On opening the thorax an immense pyriform tumor came into view. The lungs were crowded on either side so as not to be visible, and were adherent to the so-called tumor by their anterior edges. It was evident that the mass was largely made up of fluid, and my first impression was that it was the pericardium distended with blood or hemorrhagic effusion. An incision showed this to be a mistake, the pericardial sac containing not more than two ounces of serous fluid. On separating the layers of the pericardium, which were united by soft, recent, pasty adhesions, the enormous heart came into view. The right auricle, which was greatly dilated and quite as large as a normal heart, was filled with dark clot, which, being carefully removed, was found to weigh seventeen ounces. The right ventricle was also greatly dilated, but contained much less clot; the coagula were also intimately adherent to the columnæ carneæ, and therefore removed with some difficulty. The right auriculo-ventricular orifice was, of course, widely dilated, but the tricuspid valves seemed competent, in spite of some thickening and atheroma on their free borders.

The left auricle was greatly enlarged, though smaller than the right, and its walls hypertrophied. The mitral orifice was converted into a mere slit, of which the edges could be made to come into perfect apposition, and this apparent competency of the valve can still be plainly demonstrated. The normal mitral valve has been replaced by a thick, tendinous diaphragm perforated by a button-hole orifice too small to admit the tip of the forefinger. The left ventricle is comparatively diminutive, though much more capacious than a normal ventricle.

The walls of both ventricles were abnormally thin. The pleuræ were adherent in patches, and the lungs highly emphysematous, but otherwise healthy.

*Liver* enlarged, indurated and of a deep reddish-brown color.

*Kidneys* indurated, cyanotic; pyramids congested and of a deep purple color; glomeruli plainly evident to the naked eye.

*Spleen* hard and of very peculiar shape, closely resembling a miniature liver; it has a right and left lobe and subdivisions on its internal surface, curiously like the smaller lobes of the inferior surface of the liver.

*Stomach* dilated, otherwise healthy.

The cardiac cavities were not opened until after removal of the heart from the body; and the organ with its contained clots, some portions of adherent lungs, the thymus gland which was very distinct, and a portion of diaphragm, weighed 84 ounces. When the heart was emptied of its clots and the pericardium and other organs dissected off, its weight was reduced to 28 ounces.

The specimen is a typical one of mitral stenosis, and the condition of the valves as well as the clinical history lend support to the view that this form of cardiac lesion is slowly progressive, and one for which compensation may be made for an almost indefinite period. The patient, Frank P., was about 35 years of age, and an old inmate of the Philadelphia Hospital. I found him there in February, 1888, and five years before that time he had been under my care at the Episcopal Hospital. When in the last-named institution he suffered from œdema of the lower extremities and other well-marked signs and symptoms of failing cardiac compensation. These entirely disappeared and the interesting question arises whether the cardiac defect of that time was the same as that which caused the man's death. If physical signs can be relied upon, it is not uncommon for a mitral valvular lesion which permits of regurgitation to be converted into one which obstructs the auriculo-ventricular current—*i. e.*, into such a lesion as we are now considering. This might be regarded as a conservative effort of nature, for several authorities on heart disease hold that mitral stenosis is a more benign lesion than mitral insufficiency. I have no recollection of the condition of the patient while he was in the Episcopal Hospital, and a search of the records kindly made for me by Dr. S. R. Knight, the superintendent of that institution, only reveals the fact that Frank P. was admitted on June 15, 1885, with "cardiac valvular disease," and discharged on July 22d of the same year.

Dr. J. P. C. Griffith: Discussing the mitral stenosis case from a clinical point of view, I desire to call attention to the character of the

murmur produced in this condition. It is a curious fact in the history of this symptom, that it should have been for so long a time unrecognized by the profession, that having then attracted attention it should have been forgotten for a period and again brought forward and studied. The murmur arising in this condition of mitral stenosis has been frequently confused with that of the regurgitant lesion, the fault of observation being that of not carefully timing the murmur and recalling the exact time when the systole begins and the diastole ends.

I saw, several years ago, a case with a murmur typical of mitral stenosis, with a long drawn, rumbling murmur during diastole, ending with a snap at the beginning of systole. The patient died some time since, and I hope to show the specimen to the Society at some future meeting. In looking up the early notes of this case I found myself guilty of this very mistake, the murmur being confused with that of the regurgitant lesion.

The condition of mitral stenosis is more frequent than is generally supposed, especially in children. The clinical description of this stenotic lesion of the mitral valve is most excellently set forth in a paper of Bristowe's. The murmur is spoken of as "presystolic," an unfortunate name; it is long drawn, beginning right on the end of systole after the closure of the aortic valves, and lasting through diastole.

Lees has collected fifteen cases in which a regurgitant aortic lesion was mistaken for the mitral stenosis. In such a case the regurgitating lood falling back upon the mitral valve sets up a vibration of the mitral, causing a simulation of the peculiar rumbling character of the mitral stenotic sound, and giving origin to the mistake.

Dr. Henry: I omitted in this case of mitral lesion to note that the murmur was characteristic, and that the diagnosis of the lesion was made before death. I desire to lay especial stress upon the low pitch, and the long and rumbling character of the murmur. Upon this subject I would refer to the articles of Flint and Broadbent, published in recent numbers of *The American Journal of the Medical Sciences.* Of the prominent authorities Dickinson, of England, is as yet sceptical as to the exact character of the signs of this lesion.

*November* 13, 1890.

### 23. *Filaria from a dog's heart.*

Exhibited by Dr. J. H. Musser.

The specimen, as presented, was a canine heart, in which a small mass of filarial worms was seen in the left cavity. Dr. Musser, after presenting the specimen, remarked the fact that in man occasionally the filaria sanguinis hominis, a parasite related to that found in the blood of the dog, produces similar results by entering the cardiac area. He recalled a case shown at the meeting of the American Medical Association at Nashville, a patient brought from South Carolina, in whose blood the filarial embryos were to be seen, and who at this time presented cardiac symptoms, murmur, and obstruction at mitral valve, which were regarded as due to such invasion of the heart's cavity.

In the case presented the left cavity of the heart was found filled with clot, and in this clot the mass of filariæ were discovered. There were evidences in the endocardium of an irritation set up by the filarial presence, leading to the formation of the thrombus.

*February* 12, 1891.

---

### 24. *Acute endocarditis.*

Exhibited by Dr. J. H. Musser.

This specimen was taken from the body of a colored man, æt. about 29 years. There is no definite history of his life prior to his last illness; but he stated that he had always been in fair health. He was a laborer, was constantly much exposed and drank a good bit. When he was admitted to the Philadelphia Hospital there were evidences of double aortic disease, with a loud diastolic murmur extending to the apex, and a soft apical murmur extending to the axilla. The heart area of dulness was distinctly enlarged; there was increased pulsation. Dyspnœa was marked.

At the *autopsy* the present specimen was obtained, a heart considerably enlarged on the left. There is no ulcerative valvular disease, as was suspected, but the aortic leaflets are fused together and thickened; and the puckering of the valve leaflets here seen accounts for the marked

insufficiency which was diagnosed. Unfortunately at the autopsy the vessels were not saved and there is no distinct evidence of chronic arterial disease.

The *liver* was sclerotic and nutmeg. *February* 12, 1891.

---

25. *Sacculated aneurism of aortic arch.*

Exhibited by Dr. F. P. Henry.

This beautiful specimen of sacculated aneurism was removed from the body of a colored man who died of pulmonary phthisis at the Philadelphia Hospital. During life an aortic systolic murmur could be heard, but so faintly that I never asked any of my ward students to listen to it, feeling positive that it could only be detected by a trained ear. I mention this fact merely to demonstrate that the intensity of an aortic murmur bears no direct relation to the extent of the lesion producing it. As the tumor did not present externally I did not suspect the presence of aneurism, but supposed the murmur to be due to atheroma. This, of course, is in a certain sense true, for aneurism may be regarded as a late stage of atheroma.

In connection with this case I wish to call attention to the relation between valvular heart disease and phthisis. It is generally held, and with justice, that there is a certain antagonism between valvular heart disease and pulmonary phthisis, but I would emphasize the fact that this statement is only applicable to mitral affections.

Mitral disease and pulmonary phthisis are both diseases of youth and tend to exclude each other, for a lung flushed with arterial blood as a consequence either of mitral stenosis or insufficiency, does not furnish a suitable soil for the tubercle bacillus.

The case is quite different with aortic disease. This is usually a disease of advanced life and dependent upon atheroma, and, in my experience, the frequency with which atheroma and phthisis are found united is too great to be regarded as a mere coincidence.

*February* 26, 1891.

26. *Specimen of dilated aorta.*

Exhibited by Dr. F. P. Henry.

This specimen came from a man, æt. about 60 years, who was under my care for several months at the Philadelphia Hospital. His symptoms were intense and continuous pain, referred to the anterior region of the thorax, and felt with less severity in the dorsal region of the spine, and flatulence, constipation, and other signs of digestive disorder. The pain occupied the whole anterior region of the thorax, was not more marked on the left than on the right side, and did not extend into the arms. It was also continuous, as already stated, although there were decided remissions in its severity. I was accustomed to describe the case to my ward classes as one of chronic angina. The physical signs were those of enlargement of the heart and aortic obstruction, and I may say that the diagnosis was accurately made during life, and was based upon the detection of a systolic aortic murmur and the absence of the signs of regurgitation. A systolic aortic murmur in a person of advanced years, when unattended with a diastolic murmur, and when accompanied with præcordial pain is, in my experience, due to extensive atheromatous deposit in the first portion of the aorta. If, in such cases, the aortic valves are involved, they are so secondarily.

In the case before us the aortic valves are thickened and are apparently incompetent; but during life no signs of insufficiency were detected by the numerous persons who examined the patient. The pulse was one of remarkably high tension and habitually rapid, ranging a little below 100, as a rule. The aorta, it will be noticed, is decidedly dilated and the seat of extensive confluent atheromatous deposits. In spots these have undergone calcareous degeneration so as to form large mica-like scales, which may be readily raised from their beds. The orifices of the coronary arteries are almost completely obliterated. Neither albumin nor casts could be detected in the urine, but the kidneys were found of much firmer, denser structure than normal. They were doubtless in an early stage of cirrhotic change.

The other organs of the body were sound and the adipose tissue well preserved; in fact, the man was decidedly corpulent. Signs of failing cardiac compensation, such as dyspnœa, cough, and œdema, were never observed. No history of acquired syphilis could be obtained.

*February* 26, 1891.

### 27. *Aneurism of the aorta.*

Exhibited by Dr. H. F. Formad.

I. In connection with the specimen of Dr. Henry's, I have a closely allied case which I wish to present to the Society, a case of acute pneumonia complicated by aneurism. No careful examination has been made as to the exact nature of the atheromatous process, which may, however, possibly be due to tubercular causation. The heart is a small one, and on examination the valves and the heart proper show no evidence of lesion. But in the aorta, even down into the descending portion, there are to be felt patches of atheroma. The aorta is rigid, and the aneurism is about the size of an average orange. The patient was a young woman, a Hindoo, who died in the Philadelphia Hospital, a case of general tuberculosis. There was a tubercular enteritis, and with it tubercular lymphadenitis, both lungs consolidated, and riddled with tubercular matter and by small cavities. The particular point of interest in the case is the association of the aneurism with the tubercular pneumonic condition in the person of a young individual. The aneurism, as is usual, was filled with laminated clots.

II. The second case is an ordinary aneurism, of large dimensions, and has two interesting features, first, in the mode of death, and second, the manner of rupture. The man had never been so seriously ill as to have called into service a physician, and died during coitus, or shortly after it. He was a drunkard, and presented the usual lesions of alcoholism. The heart presents a marked degree of pericarditis, the pericardium being firmly adherent throughout its extent. The aneurism is in the first position above the aortic valves, and the rupture would have taken place into the pericardial sac naturally. There is a small amount of blood in the sac, but the firm adhesions have prevented much from entering. As it was, the rupture took place into the right pleural cavity. There was extensive atheroma of the aorta, even to the iliac vessels. The aneurism presents a large sac, of the size of a child's head, pointing anteriorly, and there are strong adhesions to the sternum. There were no clots in this sac, which constitutes another peculiarity. The cardiac valves were not abnormal, save for some thickening of the aortic and semilunar leaflets.

III. A third case of aneurism, which I desire to call the attention of the Society to this evening, is one which in itself did not kill the patient, although it probably had considerable to do with pro-

ducing death. The patient was a woman, and I am inclined to think that fright had much influence in the fatal result. The woman, about 50 years of age, was struck in the face by a boy, and a half hour later she fell down and died. There was found at the autopsy a slight bruise of the face, and on opening the brain cavity the organ was found somewhat congested, and there was a small ecchymosis in the floor of the fourth ventricle. I am inclined to look upon the cause of death, however, as the nervous shock, combined with the influence of the aneurism; and I would regard as the interesting feature of the case that there is here an instance of an aneurism which aided in the killing without rupturing. The sacculation is peculiar in the ascending aorta. There are a number of subaneurismal sacculations.

*February* 26, 1891.

---

28. *Dilatation of the aorta.*

Exhibited by Dr. F. A. Packard.

These specimens were removed from the body of a mulatto, æt. 43 years, a coachman by occupation. He denies specific or alcoholic history. He was in the late war, and while in the field had a leg fractured. He also during service in the army had a severe attack of acute articular rheumatism. He denies further illnesses. His work has been of medium severity; but while in the army he made many forced marches.

For the past year he has been unable to work, owing to dyspnœa, swelling of the feet and legs, and præcordial pain and distress. He was first seen by me on February 11, 1891. He was sitting up in a chair, and unable to lie down. His legs were very œdematous up to the knees. Respiration was labored, the heart's action excited, pulse intermitting and irregular, both in time and force. The apex beat was in the seventh interspace, a full inch to the left of the vertical nipple line. The area of cardiac dulness was much increased. At the apex there was a well-transmitted, loud, harsh systolic murmur; at the second right costal cartilage there was a harsh systolic murmur, well-transmitted into the great vessels, and a soft diastolic murmur heard best at the aortic cartilage, but well transmitted down the sternum. Over the whole præcordia there was marked pulsation, and at no point could normal heart-sounds free from murmur be heard. There was no evidence of aneurism. Over both lungs were numerous subcrepitant râles, except over the right lung posteriorly and at the base, where there were absent respiratory and voice

sounds, and dulness shifting with change of posture. The urine contained albumin, with coarse granular and hyaline casts.

On February 22d there was marked return of the signs of congestion, which had disappeared under treatment. He was freely dry-cupped, and his stimulants increased.

On the morning of the 23d he had a sudden attack of severe dyspnœa, with increase of cough, and severe anginoid pain in præcordia. At about 11 A.M. he died suddenly after lying down too hurriedly.

At the autopsy the right pleural cavity was found to contain fully a pint of clear serum. The left pleural cavity was empty. There was a slight excess of serum in the pericardial sac. The middle lobe of the right lung was airless, non-crepitating, and dark in color. On section the middle lobe was smooth and dark, neither looking nor feeling like croupous pneumonia. The whole lung was much congested. The left lung was also much congested, and the anterior edge of the lower lobe was the seat of a process precisely resembling that in the middle lobe of the right lung.

The heart was very large, and stuffed with blood-clots in all its chambers. The walls of all the cavities were relaxed. The root and ascending arch of the aorta were felt to be very large, and crackled almost like parchment on pressure. On further dissection of the heart, the right auricle was enormously dilated and stuffed with mixed clots. The auricular appendix contained many marantic thrombi. The wall of the auricle was thinned. The foramen ovale closed. Tricuspid orifice readily admitted the introduction of four fingers and the thumb. The venæ cavæ and sinus venosus were tremendously dilated. The right ventricle was stuffed with adherent ante- and some post-mortem clots. Pulmonary artery much dilated. Tricuspid and pulmonary valve leaflets normal. The wall of the right ventricle but little increased in thickness, the endocardium smooth. The left auricle was very much dilated. The mitral orifice admitted four fingers with ease. The auricle was stuffed with post-mortem clots. The left ventricle was much dilated, and was filled with "currant-jelly" clots. The endocardium was smooth, and not thickened, except in the region of the mitral orifice, where there was a patch of white, almost cartilaginous, thickening. The mitral leaflets were opaque and thickened. The wall of the left ventricle was about five-eighths of an inch in thickness. The aortic valve leaflets were opaque, and somewhat thickened, chiefly at the edges. Corpora aurantii prominent. The heart measured from apex to ventricular base five and a half inches. The coronary arteries were very atheromatous. Orifices of coronary arteries almost occluded by atheromatous thickening.

The aorta was tremendously dilated, but there was no aneurism. At the root a large cricket-ball could easily have been inserted, while at the junction of the ascending and transverse portions of the arch the vessel would have almost held a croquet-ball. The whole interior was covered by dry, parchment-like patches of atheroma, giving a verrucose appearance to the endothelium.

The kidneys were large, and evidently the seat of combined cyanotic change and chronic parenchymatous inflammation. The capsule stripped off readily.

The liver was a beautiful example of the nutmeg variety, the dark points being formed by the overfilled intra-lobular veins.

Dr. Fisher recalled a case of an aneurism of the aorta—the arch of the aorta—in the Episcopal Hospital in 1883, accompanied with signs of effusion into the left pleural cavity. On post-mortem examination it was found that the aneurism ruptured into the left pleural cavity.

*February* 26, 1891.

---

## 29. *Aneurism of the heart.*

Exhibited by Dr. H. F. Formad.

I have here a remarkable specimen, one of aneurism of the heart. It is only the third specimen of this sort which I have ever met, and I do not think that there are many upon record in literature. From the posterior wall of the left ventricle there arises a sac about the size of an orange, an aneurism of the left ventricle; it is distinctly within the ventricular area and is situated about an inch below the aortic opening and to the left of the mitral. The aneurismal opening is round, about an inch in diameter, with thickened edges, and leads into a sac the size of a large orange. The wall of this sac is made up wholly of fibrous connective tissue, and does not contain a vestige of heart muscle; its thickness does not exceed more than a quarter of an inch. The cardiac walls about this aneurism are evidently in good condition, and the heart is otherwise apparently normal save for a slight dilatation of the right ventricle. The valves and the orifices are perfect, except that there is slight thickening of the aortic leaflets and a few areas of opacity of the mitral. The coronary vessels are dilated; the aorta presents a few patches of atheroma, and as a rule its wall is thickened. The heart weighs between fifteen and seventeen ounces. Within the aneurism

there was but little clot, and this did not show any evidence of organization. The aneurism had ruptured as the cause of death, and in the pericardial sac were found about eight ounces of clotted blood.

The history of the case as I obtained it is but meagre. The specimen was taken from the body of a colored man, æt. 47 years. He complained but little during life; would go occasionally to the dispensary for relief for a shortness of breath. He was a dray-driver; on the day of his death, after delivering a heavy load of goods, he complained of feeling badly and went into a "soft-drink" establishment and took a drink of tea. After swallowing it he suddenly threw back his head and was dead. The kidneys were found to be cyanotic, due partly to the faults of circulation from the effects of the aneurism, partly perhaps to drink. The liver was large and fatty, and the lungs were somewhat congested and possibly indurated.

Dr. Allen J. Smith remarked that from the appearances of the specimen he considered it as probably the outgrowth of some fault in the coronary circulation, probably thrombotic in nature. During the past year or two several specimens of this kind have been exhibited before the Society, and the impression given by the exhibitors that the condition is to be viewed in the light of the result of a localized endocarditis. According to this idea the supposition is that there takes place a growth or invasion of the cardiac muscle by connective-tissue formation, bringing about by mechanical causes the atrophy and eventual destruction of the muscular substance. As a sequel of this muscular waste, the connective tissue not possessing the power of resistance possessed by the muscular wall against the intra-cardiac blood-pressure, a local dilatation of the wall results. While this may not impossibly be the occasional course in the production of cardiac aneurism, in this specimen at least, and probably in most, the lesion is rather to be regarded as a sequel of nutritional fault in the muscle following some disturbance in the coronary circulation, as from embolism or thrombosis. The coronary artery corresponding with the muscular area presenting this aneurism, in the specimen before the Society, shows distinctly about its opening and within its lumen at the beginning a roughening from atheroma, which might readily be the basis for either embolism or thrombosis. Given an area shut off from its accustomed nutritive supply by such a circumstance, it follows the usual series of changes in an infarction, the substance finally reaching the common end in necrosis and fatty change (*myomalacia cordis*). This mass of necrosed, dead muscle in the midst of healthy tissue promptly by its presence excites a reactive process (and the entire process being aseptic this latter is non-suppurative), with

the rapid replacement of the dead structures by new connective tissue—in other words, by the formation of a scar. The wall being decidedly weakened by the softening changes, and not as yet compensated by the growing new connective tissue, the formation of the aneurism begins early. Often, doubtless, this dilatation reaches rupture before the cicatricial tissue is completed; sometimes, on the other hand, perhaps the reorganization goes on so rapidly that cicatrization takes place fully without any dilatation, and all three of such conditions—rupture, dilatation, and cicatrization—are known to exist; their mutual relations can scarcely be recognized, but they must be appreciated.

Dr. Formad stated that he believed in the plausibility and the frequent truth of Dr. Smith's suggestion; but in this case he does not believe the origin could have been in thrombosis, as there are no evidences of such a condition having existed. He rather looked upon the aneurism as the outgrowth of a chronic localized endocarditis, the pumping action of the heart having overcome the non-elastic and badly resisting connective tissue, which replaced the muscular substance of the wall as it gradually atrophied from pressure of the cicatricial invasion.

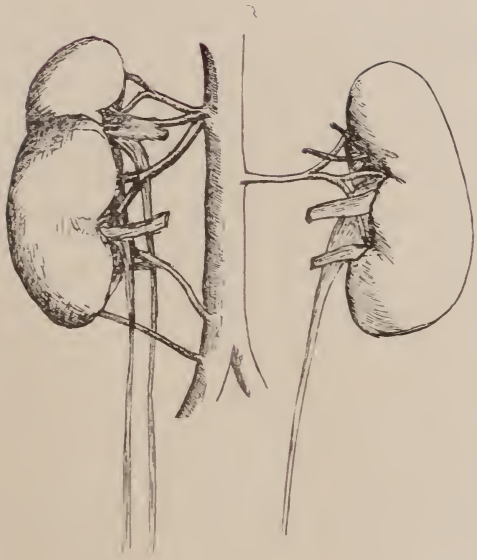
Dr. Beates said that there were certainly decided evidences of atheromatous change in the orifice of the posterior coronary artery, and the posterior cardiac wall bore witness to nutritional fault; so, too, the orifice of the anterior coronary artery is similarly affected, and probably the whole vessel is the seat of disseminated atheromatous change. Recalling the active part played by fatty degeneration in the production of the aneurisms seen in the aorta and other vessels, it cannot be regarded as improbable that the same stages characterize the production of cardiac aneurisms. *March* 12, 1891.

---

30. *Some consequences of advanced general atheroma; a rare kidney anomaly.*

Exhibited by Dr. A. STENGEL.

By the courtesy of Dr. J. H. Musser I have the pleasure of presenting for your consideration specimens illustrating the extreme stage of diffuse arterial sclerosis and atheroma, with their consequences; and at the same time exhibiting a rare, if not unique, anomaly of the kidney from the same case.



A rare kidney anomaly. Exhibited by Dr. A. Stengel.
(See p. 154.)

These specimens are from a man, æt. 62 years, a laborer, who had been for some time a patient at Blockley. Of the clinical history of the case I have little to say beyond that the man had advanced cystitis and was classed as weak-minded or demented. For some time before death he had attacks of vomiting, diarrhœa, and slight fever. Sight was not apparently affected. Shortly before the end he became unconscious, and remained so until death.

External examination of the body revealed an atheromatous condition of the radial and temporal arteries and a double inguinal hernia.

The examination of the cardio-vascular apparatus with the lesions consequent upon its derangement is here of great interest. The heart, as you see, is considerably enlarged and its cavities dilated. The muscular substance is firm but somewhat degenerated—fatty. The coronary arteries are the seat of the last degree of atheromatous change—entirely calcified, and feel like pipe-stems under the finger; their lumen is in no part much reduced, and to this, no doubt, may be ascribed the comparatively healthy condition of the muscle. Internally we see a dull-colored and thickened endocardium, sclerotic mitral leaflets, and aortic valves flexible and competent, but surrounded at their attachment by a ring of calcareous matter, which extends also into the aortic wall.

The arch of the aorta was dilated, thick, and studded with numerous calcareous atheroma-plates.

The lungs were œdematous throughout, a condition ascribable, of course, to the failing circulation of the last days of life.

In the liver were evident signs of chronic circulatory disturbance. The surface was granular, the substance tough, and when cut was seen to be of a uniform, dark red color. The organ was diminished in size and under weight. We have to deal with a marked example of cyanotic induration or red atrophy.

The gall-bladder seemed also to have felt the influence of a stagnant circulation. Its wall was thickened and much ribbed, with two or three patches where the mucous membrane looked punched out, and, though the surface did not appear ulcerous, microscopical examination showed a uniform infiltration of the whole wall with lymphoid cells, with particular massing at the areas noted. There was a small calculus of inspissated bile.

The spleen was small and enveloped in a thickened capsule, which contained a few yellowish-white patches of dense connective tissue, such as are so often met with in the spleens of old people. The pulp was not visibly altered.

The brain contained the lesions to which death was directly attribu-

table. In the mid-occipital region of the left hemisphere, lying immediately below the surface, was an area of white softening in size equal to a small lemon. This lay posteriorly and inferiorly to the supra-marginal and angular gyri, extended inward to beneath the median surface at the cuneus, but not sufficiently far forward to involve any of the central gray masses. The occurrence of this disintegration is not difficult of explanation: we have present a general atheroma, rendering the vessels of the circle of Willis and elsewhere in the brain stiffened and calcareous, their interior seriously encroached upon, as in several places observed and no doubt in many others not seen; the aortic valves and the intima of the aorta in a disorganized condition—in short, all the prerequisites for thrombosis or embolism. It was impossible to determine the place of occlusion of the circulation, nor could it be discovered whether an embolus was the cause of the occlusion. We must content ourselves with calling this an instance of thrombotic softening, and leave the determination of the cause (whether by embolism or primary thrombosis) to conjecture. It is a matter of no little interest to observe that so extensive a lesion in this region gave rise to no definite nervous symptoms excepting, perhaps, unconsciousness. Had the region of the cuneus been seriously encroached upon, or the supra-marginal and angular regions, we should have looked for marked visual disturbances, and even here there seemed enough destruction in these areas to give rise to symptoms; but there were none, and for this case the area described may be called a "silent" one.

It would be difficult to say what time had elapsed since the inception of the process of softening, but the proofs of its being a short one are at hand. The pia in the temporo-parietal region adjacent to the underlying area of degeneration presented a picture of acute lepto-meningitis in its early stage. This had extended to the other hemisphere as well as beneath the cerebellum. There seems to me little doubt that this meningitis was the direct result of microbic infection from the area of softening, both from the distribution of the lesions and from the teachings of bacteriologists. The micrococci of purulent inflammation have been observed repeatedly: Weichselbaum and Goldschmidt have found a bacillus resembling the typhoid bacillus; Neumann and Scheffer one resembling Friedländer's pneumonia bacillus, and in epidemic cerebro-spinal meningitis the occurrence of Fränkel's diplococcus is common and well known. There are here a variety of organisms assigned as causative, but I see no reason in the present state of the science of bacteriology to hold to the dogma of a special organism for every disease, and only one.

I come now to the anomalous kidney, and would preface my remarks with the observation that I have been unable to find a similar case referred to in literature. The right kidney, you will see, is divided into an upper and lower part by a marked constriction. On close examination it will be seen that the upper small part has the shape and characteristics of a separate kidney, and the same is true of the larger lower division. Each has its own pelvis and ureter in no way connected with the other; the medullæ are separate and distinct; the cortices are very slightly continuous, and, in a word, the only connection is a sort of isthmus of fibrous tissue in the centre, liberally supplied with fat, and the slight continuity of cortical substance. The blood-supply again points to the same fact. The upper part receives two arteries, which, with another going to the lower part of the kidney, spring from a common trunk, a branch of the aorta in the usual situation of the right renal artery. The lower part of the kidney receives, beside the one branch referred to, also two other arteries, one springing from the aorta just above its bifurcation, the other from the right common iliac artery. The last-named branch enters directly into the cortex of the lower end of the kidney, while all of the others enter the pelves after dividing each into two branches. To enumerate then, we have here a double kidney, apparently a fusion of two distinct organs, having separate medullæ, pelves, and ureters, and each supplied by a separate set of arteries—two for the upper and three for the lower part.

The other (left) kidney is in no way remarkable except that there are two small arterial vessels entering the cortex at the upper end along with a larger branch from the true renal artery, the remaining branches of which enter the pelvis in a normal manner.

The bladder, as was expected, shows the rugation and thickening of chronic cystitis. The mucous membrane is dark-red and rough, and on the crest of one of the rugæ near the neck presents a number of small, whitish, slightly elevated nodules of the size of a pin-head. These, as is pointed out by Ziegler, prove under microscopical examination to be lymphoid structures thrown into prominence partly by their hypertrophy and partly by the dark color of the surrounding mucous membrane. There is a small diverticulum of the bladder which admits the point of the thumb. *April* 14, 1891.

31. *Acute endocarditis, with splenic infarction.*

Exhibited by Dr. D. J. M. Miller.

The patient from whose body the following specimen was removed was admitted into the Episcopal Hospital on April 16, 1891.

R. R., white, female, æt. 17 years, a child's nurse by occupation. Until two weeks prior to her admission she had been always quite well, without history of rheumatism. She had always been pale, but had never complained of cough; she stated that she had always been rather short-breathed, but there had never been any swelling of the feet or any marked symptoms which she could regard as indicating that she was ill.

She was first taken sick two weeks before admission with high fever, pain in the right leg, and inability to move the limb. There was a chill with the fever at the onset, but no sweating; and the patient had not had any headache, diarrhœa, epistaxis, vomiting, or abdominal pain. Later on she developed a diarrhœa, with light-yellow fluid stools. The case had been regarded by the physicians attending as a rheumatic fever in the first place, the diagnosis being afterward changed to that of typhoid fever, under which she was sent into the hospital.

Upon admission the patient was noted as extremely pale, the pallor being particularly marked over the mucous membranes. Tenderness was found over the entire abdomen, particularly in the right iliac fossa; but there were no spots to be seen. The spleen was much enlarged; the liver normal. There was marked pulsation over the carotids, and over the fourth sternal cartilage on the left side there was heard a loud, double, blowing murmur, not heard at the apex or at the aortic or pulmonary cartilages. The murmur could be heard at the cervical veins, and it was thought that possibly it was an anæmic murmur. The lung appeared to be normal. The patient was placed upon liquid food. The temperature was found to vary considerably, the fluctuations being very pronounced; and she complained of decided pain in the left foot and tenderness in the lower portions of both limbs.

On April 28, 1891, the following ward note was entered: Patient seems to be but little changed since admission; if possible, paler. The diarrhœa still continues, with greenish fluid movements. Last evening the patient vomited. The temperature continues of a remittent type. The patient complains of much pain over the left foot and limb to the knee, and the muscles are tender on pressure, but there is no tenderness

in the knee-joint on pressure. The limb is held in a slightly flexed position, with the toes inverted. A loud murmur is heard with systole at the apex of the heart; no second sound heard. The murmur at the fourth sternal cartilage on the left side is not so marked as upon admission. Since admission the patient has had one or two slight attacks of epistaxis. The spleen remains enlarged. She does not cough any; upon one occasion, however, she expectorated a small amount of a brick-colored material.

The patient died upon April 30, 1891. At the *autopsy* there was found at the extreme apex of the right lung, above the clavicle, a small cavity, the pulmonary tissue about it being caseated and to a slight degree purulent. The same caseation was found in the apex of the left lung; otherwise the lungs were uninvolved. The heart was small, weighing 7 ounces; the muscle substance was pale. The left ventricle was found slightly dilated. The mitral valve was the seat of a fungoid vegetation, large and friable, especially involving the anterior leaflet. The valve itself was thinned and showed no absolute loss of substance. On two of the leaflets of the aortic valve, at the position of the corpus aurantii were small vegetations; the valve was, however, competent. The right ventricle was unchanged in size, and the tricuspid and pulmonary valves were normal. The spleen was enlarged, weighing 8.5 ounces. The capsule was adherent. On section, about the middle of the organ, there was found a yellowish, roughly pyramidal-shaped mass, with its apex toward the hilus; and there was another similar mass at the lower end of the organ near the hilus. In the substance of the lower end there was a small area of semi-fluid consistency. The rest of the organ was friable, soft, and of a brick-red color. The intestines showed nothing of note. The kidneys weighed 4 and 4.25 ounces respectively, were pale-yellowish in color, capsule non-adherent, apparently not much changed.

Dr. Fussell: The specimen of endocarditis presented by Dr. Miller is an excellent one of ulcerative endocarditis of the vegetative variety. In connection with the case, as related by Dr. Miller, I recall a case of like nature which came under observation at the medical dispensary of the University Hospital, and afterward passed under the care of Dr. George Dock. The cardiac condition was clearly recognized. Some time before death there occurred a sudden pain in the splenic area, which Dr. Dock regarded as indicating the occurrence of a splenic infarction. At the autopsy this diagnosis was verified by the discovery of a splenic abscess. *May* 28, 1891.

32. *Thrombosis of femoral artery from a case of gangrene of the leg.*

Exhibited by Dr. D. J. M. Miller.

I. M., male, married, æt. 67 years, of very intemperate habits, was admitted into the Episcopal Hospital May 29, 1891. Family history unnoteworthy with the exception that a grandfather died after amputation of a leg for gangrene, and a brother succumbed to the same affection four years ago in this hospital. Patient has suffered much from cold feet for the past three years, and has been a victim of rheumatism since 1865. His present attack began two weeks before admission, with pain, swelling, and discoloration of the toes of the left foot, and general weakness.

On admission he was very emaciated and feeble. Marked arcus senilis and extremely atheromatous arteries were noticed. The chest appeared to be normal. The heart-sounds feeble, but without murmur. The tongue was heavily coated. There were anorexia and constipation. From the middle of the calf of the left leg to the toes the skin was extremely cold to the touch, and the limb swollen, painful, and œdematous. The toes were dark, almost black; the surface dry. Neither sugar nor albumin were found in the urine. Pulse, 132; temperature, 101°. By the 22d the swelling and pain had somewhat diminished, but the discoloration was spreading slowly upward, and now involved the greater part of the dorsum and all the sole of the foot. The surface was moist, which may have in measure been due to the moist dressings—lead water and laudanum. The pain was very great and was only partially removed by ½-grain doses of opium every three hours.

On the 25th the whole of the leg from the ankle down was involved. Above the implicated parts the leg was swollen and painful, while the gangrenous portion was completely non-sensitive, moist, the epidermis loosened, and emitted a very offensive odor. The gangrene had spread a little higher up by the 29th, when death occurred from exhaustion. There was never any distinct line of demarcation, the upper line of the gangrenous portion merging into the healthy tissue.

At the *autopsy* the lungs, with the exception of a few old pleuritic adhesions, were normal. The heart muscle was pale and flabby; the aortic valves had several atheromatous patches upon them, and the aorta itself was extensively atheromatous. The kidneys appeared to be unchanged, the capsules non-adherent. The liver was slightly contracted, weighing two pounds and twelve ounces. The left femoral artery with

its extensions was removed from a little below Poupart's ligament to just above the ankle. The artery was stiff and very brittle, especially the tibial and peroneal portions. The intima had lost its smoothness, was rough and uneven, and showed calcareous plates and depressions here and there throughout its surface. The interior of the artery was filled with an extensive thrombus extending from the lower end of the peroneal and posterior tibial arteries through the popliteal and femoral arteries to a point just above the opening into the adductor magnus muscle, where it terminated abruptly. In the femoral and upper portions of the popliteal artery the clot was whitish in color and separable from the sides of the vessel; below it presented the appearance of disorganized blood and filled the whole lumen of the vessel, adhering to and staining the intima. *June* 11, 1891.

---

33. *Anomalous extra cusp to the pulmonary valve.*

Exhibited by Dr. H. W. Cattell.

Dr. H. W. Cattell presented a heart in which there existed an anatomical anomaly, in that the pulmonary orifice was provided with four perfect valve leaflets. The heart was removed on June 29, 1891, at the Philadelphia Hospital, from B. G., æt. 80 years; color, white; autopsy, forty-eight hours after death. In regard to his clinical history just before death, but little is known more than that he had occasional attacks of weakness, so as to be obliged to sit down for a time. He had had no treatment at clinic beyond some cough mixture and a laxative for several months, but had two bottles of medicine from a German pharmacist beside his bed, which it was stated he had been taking previous to his death. He had been used by the residents of Blockley for a long time for the purpose of illustrating a great variety of heart-sounds; mitral regurgitant was heard and the aortic sounds were double. There is no definite history of a tricuspid murmur. At the autopsy the heart was found to be considerably enlarged, weighing twenty-seven ounces when filled with blood. Water passed readily through both the pulmonary and aortic valves. The walls of the right ventricle were thin; the pulmonary artery was enlarged and guarded by four perfect semilunar leaflets. The circumference of the pulmonary artery just above the valves was 9 cm.; the broadest portion was 14 to 16 cm., just before the bifurcation, thus forming a pouch. The valves were thick-

ened and may be described as consisting of the usual right and left anterior, with a right and left posterior semicircular fold; the length of the free margin of the right anterior valve being 2 cm., normal depth 1.3 cm., stretched to its fullest capacity 2 cm; the left anterior being 1.3 cm., 1.4 cm., and 1.8 cm. respectively; the right posterior 2.7 cm., 1.5 cm., and 2 cm.; left posterior 1.8 cm., 1.4 cm., and 2 cm. The aorta was full of atheromatous plates, and the aortic valves were more markedly thickened than the pulmonary. In reference to the rest of the body there was nothing of interest bearing on the above anomaly.

Thanks are due to Dr. Sherman for the clinical history of the case.

*June* 11, 1891.

---

### 34. *Aneurism of the aorta.*

Exhibited by Dr. TUTEUR.

The specimen presented was removed from the body of a colored man, a stevedore, æt. 31 years. While engaged in heavy lifting some months previously, he had suddenly felt something give way in his chest, and experienced shooting pains in that region. He soon developed a brassy cough, and upon examination the physical signs of an aneurism of the arch of the aorta were found. About twenty-four hours before the rupture of the aneurism he began splitting blood, and died suddenly from a profuse hemorrhage, losing about five pints of blood.

At the post-mortem examination there was found a sacculated aneurism at the juncture of the transverse and descending aorta; it was of the size of an apple and was filled with clots. The upper lobe of the lung on the left side was almost solidified by pressure. The rupture had taken place into the left bronchus, the patient lingering about an hour after the rupture. During his stay in the hospital (Philadelphia Hospital) he constantly assumed the knee-chest posture, and complained of intense pain in the chest when he straightened out. He had no specific history, but was found to have Bright's disease of the kidneys. From the major aneurism there had developed a secondary aneurism of the size of a small apple, reaching over to the fourth dorsal vertebra and compressing the lung.

Dr. F. A. Packard, after looking at the specimen, remarked that it looked very much as if the primary aneurism had ruptured some time before death, and that in this way had formed a secondary sac, a false

neurism, the rupture of which into the bronchus had led to the symptoms immediately preceding death.

Dr. J. H. Musser recalled a case under his care in which there was a cough with profuse muco-purulent expectoration, and at first it was thought that the patient had phthisis. No bacilli, however, were found in the sputum. Examination showed the presence of an aneurism of the arch of the aorta, and it was then felt that the cough and other signs of phthisis were due to a dilatation of the bronchus, arising probably secondary to the pressure from the aneurismal mass. The aneurism suddenly ruptured, and death followed promptly. At the autopsy a sacculated aneurism was found in about the same position as that shown before the Society, with near it a dilated bronchus into which it had ruptured. In this case, too, there was more or less collapse of the upper lobe of the left lung from pressure. Commenting upon why the rupture should be into the bronchus at this position of an aneurism rather than into the œsophagus, and the fact that rupture into the right bronchus is so much less frequent, the speaker said that he could recognize an anatomical reason from the relations of the parts. The formation of adhesions to the bronchus at this side is more readily made, because of the relations of the parts. After adhesions are formed from the tugging and pulling upon the sac on coughing, as well as in the respiratory efforts, there could be sufficient damage done to bring about the result seen in the specimen presented.

Dr. J. B. Deaver spoke of the recent discussion held in New York, of the method of cure of aneurism of the arch of the aorta by ligation of the common carotid and subclavian, brought forward by Prof. Bryant. It was believed to be a proper procedure where the symptoms were not too marked and it was deemed that the walls of the aneurism could withstand the increased pressure. The operation is done with a view to aid in coagulation in the sac by slowing the current. *June* 25, 1891.

## V. RESPIRATORY SYSTEM.

### 1. *Plastic pleurisy.*

Exhibited by Dr. M. H. Fussell.

This specimen was removed from a case which was seen by Dr. Service some eighteen months ago. At that time the man was suffering from failure of strength and it was discovered that he had a continued fever. I saw him eight months ago. No lesion could be discovered in any organ. The blood was examined under the microscope, but there was no increase in the number of the white corpuscles. The man continued about his usual occupation, that of a gardener, and was fairly well until about three months ago, when he had an attack of acute suppurative tonsillitis. At that time Dr. Service thought that the liver was enlarged, the dulness extending from the fifth rib to three inches below the margin of the ribs. I saw the man last night, when he was moribund. This afternoon we made the *post-mortem* and found double pleurisy, that in all probability was diaphragmatic in origin. On the right side the lung and diaphragm formed one great mass of lymph. The whole surface of the lung is covered with membrane. The liver weighed five pounds; the spleen was not markedly enlarged. The stomach was the seat of hemorrhages into the mucous membrane. There was no vomiting in this case at any time. The marrow of the bones, as far as examined, did not present any change. *March* 27, 1890.

---

### 2. *Large pulmonary cavity simulating pneumothorax.*

Exhibited by Dr. S. Solis-Cohen.

This specimen is of interest on account of the simulation of pneumothorax by the physical signs. I made a diagnosis of large cavity or pneumothorax, but favored the latter supposition. The cavity is very large and the anterior wall of the lung is gone, so that the pleura forms

the anterior limitation of the air-space. The physical conditions of pneumothorax were therefore exactly simulated. All the signs of pneumothorax were present. *April* 24, 1890.

---

3. *Case of pneumonia and pericarditis with remarkable simulation of the signs of pneumothorax.*

Exhibited by Dr. H. M. Fisher.

Patient, M. G., æt. 28, married, was admitted to the Pennsylvania Hospital April 12, 1890. He had been working at the Phœnixville Iron Works and walked from the station to the hospital. He was exceedingly weak; pulse (intermittent) 100, respirations 56, temperature 103.5°. Heart pushed very much to right, the chief pulsations below the xiphoid, and there was tympanitic percussion resonance over the normal præcordial region. Heart-sounds extremely weak, but a murmur was heard (site and time not noted) which appeared to be extra-cardiac. Hyper-resonance over right lung. Under left clavicle percussion note perfectly flat as far as third rib, but below this point note was high-pitched and tympanitic. Breath-sounds over upper half of left side, anteriorly, amphoric; over lower half extremely feeble. Metallic tinkling and bell-sound distinctly heard over the lower thoracic region.

As patient was so very weak the back of his chest was not examined. Ordered ammon. carb., grs. x, every second hour; strychnia, gr. $\frac{1}{40}$, every fourth hour; tincture of digitalis and whiskey.

*April* 13. Condition critical; jaundiced.

14*th*. Pulse irregular; chest full of râles.

15*th*. Respirations 70 per minute; died at noon. There was little or no expectoration during the whole course of the disease.

*Autopsy, twelve hours after death.*—Pericardium thickened and adherent to sternum, diaphragm and surrounding parts. There was marked diaphragmatic pleurisy, with adhesion of the visceral and parietal layers of the pericardium at the base of the heart. Pericardium studded with organized and a good deal of recently formed lymph. On the outer surface of the right ventricle a white patch. The left lung was entirely hepatized with the exception of a small portion of its anterior margin, which was emphysematous. The upper half of the upper lobe showed gray hepatization. The right lung was somewhat congested but crepitant throughout. Brain not examined.

This case is, it seems to me, more interesting in its clinical than in its pathological relations. The diagnosis I made when I found this man suffering from intense dyspnœa, with his heart drawn far over to the right, with tympanitic percussion resonance over lower half of left chest, amphoric breathing under left clavicle, extremely feeble breathing over the lower half of the left chest, metallic tinkling and the bell-sound distinctly elicited over the lower half of the left chest, was rupture of the lung with consequent pneumothorax following pneumonia or pulmonary abscess. The man was a Pole or Hungarian and could give no account of himself. It was a mistake that greater care would probably have saved me from making, but I contend that there was a peculiar combination of conditions in this case which rendered a diagnosis difficult. *April* 24, 1890.

---

4. *Specimens from a case of empyema.*

Exhibited by Dr. W. E. Hughes.

I have here specimens from a case of pleurisy which subsequently developed empyema; after tapping, pyo-pneumothorax appeared without any apparent connection between the bronchial tubes and the pus cavity. Later there formed at the upper part of the chest a small swelling, which evidently contained air, and connected with the chest cavity. Before death there was evident communication with a bronchus.

The lung is an ordinary collapsed one. The communication was at the apex. The other lung was tuberculous. Here is the abscess cavity extending over the second interspace, half-way over the third rib, and up over the second rib, and communicates with a bronchial tube. There was not much subcutaneous emphysema, as the ulceration had not reached the superficial tissue. *May* 8, 1890.

---

5. *Partial perforation of the chest wall in phthisis.*

Exhibited by Dr. W. E. Hughes.

This specimen is from an ordinary case of phthisis which went on without remarkable symptoms until, two months before death, the man complained of pain in the second right interspace. This pain persisted,

and in about a month a swelling containing air became evident. There was a perceptible impulse on coughing. He died from the ordinary causes of death in phthisis. At the post-mortem there was found erosion of the second right costal cartilage. At its articulation with the sternum it was almost completely broken off. Below this there was a perforation through the intercostal space with the formation of a large air-containing sac beneath the skin. The skin alone retained the air in this sac. The perforation had taken place through the fused surfaces of the pleura. There was no pyo-pneumothorax. The communication was direct into the lung cavity. Some time ago I presented to the Society a similar condition, but there the communication was through a pyo-pneumothorax. *June* 26, 1890.

---

6. *Specimen of phthisical cavity communicating with pleural space; early course of case simulating typhoid fever.*

Exhibited by Dr. B. Brooke.

This specimen is from Dr. Hughes's ward in the Philadelphia Hospital. A man was admitted to the hospital with a history of feeling ill for a week or ten days. The temperature on admission varied between 102° and 103°. There was diarrhœa, with yellow stools. He had a typical typhoid tongue. The temperature ran along in the same way for four or five days. On examination of the lungs, Dr. Hughes found slight consolidation at the left apex, right apex with harsh and prolonged respiration; and he concluded that the case was one of phthisis rather than of typhoid fever. At the end of ten days, the temperature fell to normal and after that the case ran the ordinary course of phthisis. The man for three weeks had been failing, when three days ago he was seized with great pain in the right side and intense dyspnœa. Examination showed a condition of pneumothorax, and diagnosis of rupture of a cavity was made. The post-mortem showed two orifices communicating with cavities. One was quite large, the other small. The lung was found completely collapsed and the air was under considerable pressure, the edges of the opening probably acting as a valve.

Dr. Lawrence J. Flick: This case is of considerable interest from a clinical point of view as it is one which in practice is probably frequently misunderstood. I am under the impression that many of the cases of so-called typhoid fever are really cases such as these—cases of tubercu-

losis, with possibly intestinal involvement and running a very rapid course. I think that these cases are often returned as typhoid fever when they are really cases of tuberculosis. In this case the amount of tissue involved seems to be small to have caused so much disturbance. Were there lesions in any other organs?

Dr. Brooke: The man had been in the hospital four or five weeks. The left lung showed a good many tubercles, but no cavities. The liver was fatty, but the other organs were healthy. No lesions were found in the intestine. The intestinal glands were quite enlarged.

*September* 12, 1890.

---

7. *Specimens from a case of suffocation.*

Exhibited by Dr. H. F. Formad.

I have here the specimens from a case of suffocation which were removed for me by Dr. Wm. Brooks, who substituted for me during my absence from the Coroner's office during the past summer. The subject was a man, æt. 90 years, who was suffocated by the gas from a coal stove. I have not yet had an opportunity of examining the specimens, but the lungs are intensely congested, as can be readily seen. They look as though they had been soaked with blood. The man, I believe, was perfectly well up to the time of his death. *September* 25, 1890.

---

8. *Tubercular pleurisy with tuberculosis of lungs.*

Exhibited by Dr. E. L. Vansant.

W. C., æt. 49 years, was admitted to Blockley Hospital January 29, 1891. At this time he had an effusion in his right pleural cavity extending to the nipple. From his history it was learned that he had had pleurisy last spring and had had a cough twice since then. He was weak and emaciated on admission, and since then has had a continuous elevation of temperature with irregular variation, heavy sweats almost daily, and loss of flesh and strength. He had little cough and expectoration. Two weeks after admission the right pleural cavity was tapped and about three ounces of bloody serum obtained. The effusion was loculated, as adhesions were felt with the needle, and when broken

allowed more serum to flow. On examining the specimens it may be seen that the lungs are considerably involved by tubercular deposit, and that the pericardium is also invaded. The pleural surfaces are rough and at points show the tubercular character of the change. The case was marked by some hemorrhagic type, but this probably was not existent in the beginning, starting rather from such ecchymotic hemorrhages as may be seen here and there in the pleural membrane, and probably of a rather late development. *March* 12, 1891.

---

### 9. *Plastic pleurisy and pneumonia.*

Exhibited by Dr. H. F. Formad.

The case I have to present before the Society this evening is one from an ordinary case of walking croupous pneumonia, with a remarkable degree of pleuritic involvement. The specimen has been but a single day in alcohol, but this has been sufficient to give to this widespread mass of lymph deposit a leathery consistency which it does not have when fresh. It was of a gelatinous character, covering the entire lateral and posterior portions of the pleura of this right lung, and nearly half an inch in thickness when first removed. The man was walking about, was drinking, became drunk, was arrested and died in a station-house without any special symptoms calling attention to his condition. I have rarely seen such enormous masses of lymph, covering the postero-lateral and diaphragmatic wall of the lung like a regular membrane, several lines in thickness.

Dr. Miller remarked that some years ago he assisted at an autopsy in the country where just such a widespread and thick deposit of lymph was found about the heart, although it had never been diagnosed during life.

Dr. Stengel reported the occurrence of three similar cases under his observation, so far as the coincidence of pneumonia or pleurisy with latency of symptoms was concerned. The first was a case of double pneumonia who was walking about the streets hunting a hospital; he found one at last, was put to bed, but given no treatment. He recovered. A second, with latent symptoms, was an old man, æt. 65 years, demented, and without much care. One day he refused to get up from his chair, and thus attention was called to him. There was no fever, but little acceleration of respiration and no cough. He died the same

day. At the post-mortem examination there was seen to be a croupous pneumonia at the base of the right lung, also an ulcerative endocarditis. A third case was that of an old man, æt. nearly 70 years, who developed a fever without other symptoms beyond a slight diarrhœa. After several days there was found a patch of pneumonic consolidation at the root of the right lung; the case passed on to crisis and recovery.

*May* 28, 1891.

---

10. *Exophthalmic goitre and phthisis.*

Exhibited by Dr. S. Solis-Cohen.

From this case were presented the thyroid gland, the semilunar ganglia, the splanchnic nerves, portions of the cervical sympathetics and of the pneumogastrics, and a piece of one of the adrenal bodies. The specimens were removed from the body of a man, æt. 28 years, who died of phthisis in the Philadelphia Hospital. The case exhibited the usual symptoms of phthisis, certain more or less hysterical phenomena, some gastric disturbance, belching, with occasional inability to retain food after swallowing, etc., and a very rapid rate of cardiac pulsation. The especially interesting features of the case were hemorrhage—there had been hæmaturia—tachycardia, and an intermittent enlargement of the thyroid gland. At times the goitre was quite visible, at other times it was scarcely palpable. As the case progressed the thyroid constantly became more and more prominent. After death the organ, as presented, is about one-third larger than would be expected, and full of colloid islets. The semilunar ganglia and the splanchnic nerves are enlarged and hard; the same may be said of the cervical sympathetics and also of the vagi. The cartilages of the larynx are hard and approaching ossification. The lungs are filled with tuberculous matter.

Dr. A. A. Eshner: The clinical history of this case was much more interesting than would be supposed from the appearance of the specimens. The patient showed during my service as resident physician in Blockley Hospital the rational signs of phthisis, although the physical signs elicited by percussion and auscultation were but poorly marked. The enlargement of the thyroid at that time was not evident; and I feel somewhat uncertain as to the importance of these symptoms of exophthalmic goitre. I feel that the tachycardia at least could be ex-

plained upon other grounds than the presence of Graves' disease. This was noted at the time during which I came in contact with the patient. It may be regarded, aside from Graves' disease, independently of whether it be due to disease of the cervical sympathetic system or to a lesion in the floor of the fourth ventricle (White), as possibly the result of involvement of the cardiac sympathetics in a fibroid condition from extension of the inflammatory process from the neighboring structures.

*June* 25, 1891.

## VI. GENITO-URINARY SYSTEM.

### *a.* KIDNEYS, BLADDER, ETC.

#### 1. *Sacculated bladder.*

Exhibited by Dr. M. J. Rosenau.

The bladder which I exhibit was taken from a man who died in the medical wards of the Philadelphia Hospital some days since. The patient was a colored man, with evident signs of chronic cystitis—thick, ropy, alkaline urine, full of mucus and triple phosphates. In the hypogastric region, to the left of the middle line, was a plainly palpable tumor about the size of an apple, which was somewhat movable, but never varied in size in the slightest. The patient, a day or two before death, passed large quantities of bloody urine—from appearances at least half blood. There was at the same time great prostration. He died soon after the appearance of this symptom.

At autopsy this large sacculated bladder was removed. It will be seen that it is a typical instance of chronic cystitis. The walls are very much thickened and hemorrhagic on the mucous surface; there is extreme ribbing, and to the left in front, in the position in which the tumor was felt before death, is this diverticulum—much like the bladder proper in structure, but separated from it by a narrow-mouthed opening which might readily be entirely occluded when the bladder was full of urine. This accounts for the fact that at no time did this mass appear to grow smaller—even when the urine had been thoroughly drawn by catheter.

*December* 12, 1889.

---

#### 2. *Large white kidneys.*

Exhibited by Dr. H. W. Cattell.

I wish to present two kidneys removed from a case which ran the ordinary course of Bright's disease. These specimens are of interest on account of their large size. The right kidney weighed thirteen and one-

half ounces, while the left weighed nine and three-quarter ounces, making a total weight of twenty-three and one-quarter ounces. There is also here a supernumerary nodule apparently composed of kidney substance. *March* 27, 1890.

---

3. *Specimens illustrating procidentia uteri, with hydronephrosis and calculi in the bladder and ureter, and anomalous opening of the right coronary artery.*

Exhibited by Dr. A. V. Meigs.

A woman, æt. 63 years, and looking much older, was admitted to the Pennsylvania Hospital, August 5, 1889, and gave the following history: She is a widow and kept a tavern for twelve years. She has always been a drinking woman, but never to excess. She has had two stillborn and one living child. For thirty years she has had falling of the womb, caused, she says, by heavy lifting. Of late this caused her so much pain when she walked that she was obliged to remain in bed. During two weeks before her admission to the hospital she had diarrhœa and frequently hiccough, with poor appetite and occasional vomiting and pain in the stomach. She urinates frequently and is unable to control the flow, and is always thirsty. There is no cough. She is feeble, and the bowels are moved involuntarily. The temperature is normal. The uterus lies between the thighs outside the vulva. Physical examination reveals no disease of the heart or lungs. She died August 9, 1889.

*Autopsy.—Lungs:* Pigmented, large; filling the pleural cavities. Not injected; greyish in color; no pleural adhesions.

*Heart:* The walls and cavities slightly enlarged, but the tissues soft and pliable. The transverse aorta enlarged by about one-half. The four valves natural, but the opening of the right coronary artery is not in the usual position, as it lies directly in the angle between the right coronary and inter-coronary flaps.

*Liver:* Slightly enlarged and presenting nutmeg appearance. Gall-bladder entirely filled with very numerous small calculi.

*Spleen:* Normal.

*Kidneys:* The left nearly twice the natural size, injected, and dark in color. The pelvis and ureter nearly as large as the little finger. The right kidney much reduced in size and saccular, it being merely a thin bag. The pelvis and ureter even larger than upon the other side, and

twisted. It contains some semi-purulent fluid, and low down, an inch or two above its entrance into the bladder, are two small stones.

The *pelvic organs* are all forced downward, so that the vagina is turned entirely inside-out and lies outside the vulva. The meatus, also, is outside of the vulva, as is about half of the bladder. The bladder walls are thick, and the viscus is small, and contains two calculi. The urethra is only about half an inch in length, and has upon its surface several caruncles. There is procidentia of the uterus, but no inversion, about half the organ lying within the vulva.

The right Fallopian tube is much elongated, and the ovary upon this side, which is fibrous-looking, can be felt from above; the left ovary is dragged deep into the pelvis and there is a cyst about an inch and a half in diameter an inch or two from the uterus. It is impossible to say whether this was ovarian in origin or not. The rectum is prolapsed about one inch, and there are numerous ulcers upon the surface of the vagina which lies outside the vulva.

This patient was under observation in the hospital only four days, and she was in constant pain, which was much increased upon any attempt to examine her being made. As her condition did not seem urgent, and there did not appear to be any likelihood of her dying soon, no thorough examination of the local conditions was made further than to ascertain that she had procidentia uteri, and that the everted vaginal surface was much ulcerated. Her death was quite sudden and unforeseen, though not surprising; its immediate cause could not, nor can it now, be understood. That the diagnosis of calculus and hydronephrosis was not made is not surprising when it is recollected that there were so many other conditions, and more obvious ones, than calculus to account for the pain suffered, and that the one positive symptom of hydronephrosis—tumor—was absent.

The unusual position of the outlet of the right coronary artery of the heart is a curious and interesting anatomical anomaly.

Dr. James Tyson: I have had a similar case to this, although more pronounced in the dilatation of the ureter and the size of the spleen. The subject was a boy, æt. 10 years, who had been twice operated on for stone and the stone removed each time. Notwithstanding this, a number of stones were found in his bladder at his death. In each ureter were stones as large as the index finger, of phosphatic nature; the kidneys were cystic; these and the bladder are figured in my book on *Diseases of the Kidney.*

Dr. John B. Deaver: I recently operated for stone in the bladder in a case on which ovariotomy had been performed and the bladder wall

probably included in the pedicle. A ligature ulcerated into the bladder and was the source of the formation of the stone. Three stones were extracted. Dr. Gross removed the first stone. When I operated, I noticed a roughened point on the posterior surface of the bladder, and when I performed the second operation I determined to remove this, and removed a stitch which had evidently caused the formation of the stones. Murray Fenwick describes two such cases in which he demonstrated the presence of ligatures by the cystoscope.

Dr. Laplace: I think that the shortening of the urethra can be explained by the presence of stone in the bladder, which has caused cystitis followed by inflammation of the bladder and pericystitis. The fibrous tissue thus formed has contracted, as it does in other situations.

*March* 27, 1890.

---

4. *Calculous disease of the kidneys with stone in the ureter.*

Exhibited by Dr. J. Daland.

These specimens are unique in my experience. They were removed from a man, æt. 55 years, of full habit, and accustomed to take plenty of the good things of this life, both solid and liquid. He was rheumatic, and later became a well-marked gouty subject. For twenty-five years this man had presented pus in the urine and was subject to attacks of renal colic, but no stone was ever found. These attacks had been especially marked since 1870. He, at times, passed renal sand. At no time were tube-casts found. The attacks of renal colic occurred at irregular intervals and were referred to the left kidney, and pain was complained of in this region. He had gradually failed in health, but until a few months ago was able to attend to his business. The operation of nephrectomy had been seriously considered, the idea being that there was possibly an encysted calculus of the left kidney. The patient has been more or less under Dr. Pepper's care during this time. About a week or ten days ago he presented sudden suppression of the urine and in the course of twenty-four hours not more than four ounces of urine were removed with the catheter. About twelve hours later I removed almost a quart. This was followed by relief of the uræmic symptoms which had been present. It occurred to me that this man may have had blocking up of the left ureter with thick pus and that the remaining kidney was unable to carry on the work and, therefore, this involuntary experiment proved to my mind that operation was unjustifiable.

The result of the autopsy was particularly interesting. The left kidney shows a series of calculi in its substance, some as large as a walnut. These practically replace the renal structure. In addition, smaller calculi can be seen studded through the organ. The kidney contains a quantity of sero-pus. The right kidney is in practically the same condition. At the point of entrance of the left ureter into the bladder a calculus as large as a marrowfat pea can be felt. It is probable that at the time of suppression we had blocking up of the left ureter, not only by mucus and pus, but also by this calculus.

The case is of interest for the following reasons: First, the long duration of the illness, not less than twenty-five years; second, the long period of comparative good health and the fact that the man was able until two or three months ago to perform his various duties with a fair degree of ease and vigor, although he had but a small quantity of renal structure left.

Incidentally, some may be interested in this diverticulum, which is noted simply as an anomaly.

Dr. James Tyson: I think that Dr. Daland is correct in his statement that this case, taken in connection with its history, is unique. While I have seen a number of symmetrical calculous kidneys, I have never met any of such long duration as this. Some years ago, I presented to this Society two kidneys which were similarly riddled with retained stones which were removed from a child twelve years of age. We know that cystic kidneys are found with quite as little structure as this, the subjects dying at an adult age, but calculous disease, which adds the elements of irritation and inflammation, I think rarely allows its subjects to live so long when the disease is of such a general character as in these particular specimens. I do not think that it necessarily follows that the operation here would have been fatal. Operations have been done in cases showing no more renal structure than these kidneys, and yet the patients have survived for a considerable length of time.

*April* 24, 1890.

5. *Specimen from a uræmic case, with symptoms simulating intestinal obstruction.*

Exhibited by Dr. E. Laplace.

Last Saturday about noon there entered the Philadelphia Hospital a patient in a semi-unconscious condition presenting the symptoms of in-

testinal obstruction. He was first sent to the medical, but his condition being recognised he was transferred to the surgical ward. I was sent for and found the man in the following condition: He was an Italian, who knew no English and we could obtain no previous history. We had only the objective signs to guide us. There was stercoraceous vomiting. The temperature was subnormal, the skin cold and clammy; and he was evidently in a state of collapse. On the left side there was a scrotal hernia easily reducible. On the right side there was no inguinal hernia, but a little tumor was felt below Poupart's ligament. This was not reducible. After careful examination it was concluded that this was probably a femoral hernia. This diagnosis was made from the situation of the tumor and its tendency to come over Poupart's ligament.

I operated and found this little tumor which I show you in the crural canal internal to the femoral vein. I felt something move in what I took to be the sac. I pushed this under Poupart's ligament and thought that I had reduced the hernia. The patient rallied from the operation and seemed better. The temperature went up to normal and two hours after the operation he had an evacuation from the bowel, and during the night he had, I believe, nine movements. He passed a good night, but the next day at ten o'clock he began to sink into a state of collapse, with no evidences of intestinal obstruction, and in an hour was dead. When I saw the patient Sunday morning I passed a catheter and removed urine containing a large quantity of pus. This was all the urine that had been secreted after the operation.

At the post-mortem examination, which was made by Dr. MacFarland, we found there were virtually no kidneys. Only a slight amount of cortical substance could be seen. I found an enormous cyst containing pus and these large stones. When the seat of operation was cut down upon there was no hernia. What we took for the sac of the hernia was only the fascia lata and fascia propria, with a large development of fat. On examining the intestines there was nothing to suggest obstruction except a small portion of the ileum which seems to be inflamed. This involves the mucous coat rather than the peritoneal. It is a question whether these changes are due to inflammation or to hypostatic congestion, as the post-mortem examination was made forty-eight hours after death.

This case is interesting from three standpoints: First, from a clinical standpoint: The man certainly presented symptoms of intestinal obstruction. Second, from a surgical standpoint. The mistake of confounding hypertrophy of the fascia lata and enlarged lymph glands with hernia has frequently been made, and instances of this will be found recorded in all the text-books. Third: Here are two kidneys

which are as diseased as any two kidneys that I have seen from one patient. This condition evidently came on gradually, and the man was able to work up to a short time before his death. It is clear that the elimination of most of the urea has taken place through the skin; and any shock, as from an operation, would be sufficient to disturb the equilibrium and cause a demand to be made upon the kidney for the elimination of urea, uræmia resulting. The important question is, What was the cause of such unmistakable symptoms of intestinal obstruction? If no other cause can be found, we are bound to conclude that uræmia may cause symptoms simulating those of intestinal obstruction.

Dr. Coplin: I have seen a number of cases where the most trifling operations have caused the most serious results. I made an autopsy for the late Dr. Gross on a man who died of uræmia thirteen hours after the meatus had been cut. I found kidneys like those shown to-night; there was a history of gonorrhœa and gonorrhœal cystitis. I also recall a case in which Dr. Hearn and Professor Brinton sounded for stone and the man died seventeen hours later. At the post-mortem I found the condition of the kidneys similar to that in the previous case. One thing that has struck me in these cases is that when one of the kidneys is diseased to such an extent that its function is obliterated we have no way during life of determining this fact. I remember one case in which a patient died twenty-seven hours after examination for a stricture with a bulbous explorer. The urine had been examined with negative results. One kidney was found in the condition of those shown to-night. In the case first alluded to there was persistent vomiting, which lasted for six hours. Why such slight manipulation of the urinary tract should lead to uræmia and death, I do not understand. The opinion of most recent date is that the symptoms are due not to the suppression of urea, but to the suppression of what are called extractives. Attempts have been made to demonstrate this in surgical kidney and to enable us to differentiate this from ordinary contracted kidney.

Dr. M. O'Hara: It is quite possible to have marked symptoms of obstruction and yet the patient recover without the use of the knife. There may even be stercoraceous vomiting. Might this not have been a case of fecal accumulation?

Dr. J. M. Baldy: There are certain cases where there is no true obstruction. I mean that there is no obstruction that can be demonstrated at the autopsy. In laparotomy and hernial operations, the mere handling of the intestine will often paralyze its walls, giving rise to intestinal obstruction and death, and yet no evidence of obstruction can be

found post-mortem. Even in hernia, where the sac has not been opened, such a condition of affairs may follow. In one case, where I removed large pus tubes, the patient developed symptoms of intestinal obstruction, but after death the only lesion found was surgical kidney.

*May* 8, 1890.

---

### 6. *Vesical calculus.*

Exhibited by Dr. G. A. Bodamer.

I have here a stone removed by the lithotrite and evacuator from a patient æt. 77 years. He was first told that he had a stone in 1868. Since then he has been examined by a number of physicians. In 1888, Dr. Agnew told him that he had a stone the size of a walnut. Last Thursday I removed this stone with the Bigelow lithotrite and the Otis evacuating apparatus. Before crushing, the stone measured two and one-half inches in diameter; the fragments weigh over five ounces. Before the operation there were symptoms of cystitis with the passage of crystals of triple phosphate. The stone seemed harder than a triple phosphate calculus and some of the fragments are of a reddish hue, suggesting uric acid. Since the operation the bladder has improved and there are very few symptoms of cystitis. The patient holds his water now for three hours, whereas before he could not retain water more than half an hour. *May* 22, 1890.

---

### 7. *A case of nephro-lithiasis.*

Exhibited by Dr. L. Wolff.

Dr. T. H. Fenton was called about seven years ago to a gentleman, J. W. R., who was suffering from a right-sided renal colic. Patient was a well-built, hearty man at that time, æt. 60 years. There was a history of similar attacks dating fifteen years back. He had never used alcoholic beverages of any kind, always enjoyed good appetite and lived a most regular life. He was of vivacious disposition and exercised freely in the open air. The examination of the urine at that time demonstrated hyperacidity, pseudo-albuminuria, absence of oxalates, while pus cells were present in great abundance. Further, a very severe renal

colic occurred twice during the last seven years. The quantity of pus in the urine amounted then to not less than half the volume of the urine voided; there were present in the urine, besides this, great quantities of mucus with the subjective symptoms of cystitis, which were always relieved by washing out the bladder. About four years ago Dr. Tyson was called in consultation, who confirmed the diagnosis of pyo-nephrosis with cystitis, without expressing himself as to existence of renal calculi. The periodical exacerbation of the symptoms required symptomatic treatment consisting principally in antiseptic correction of the urine by administrations of boric and benzoic acids; besides a well-regulated regimen, large quantities of lithia water were ordered. The patient did comparatively well under these until March, 1889, when Dr. Hampton was called with Dr. Fenton in the case. The symptoms appearing at this time were increased by a sudden amaurosis. By ophthalmoscopic examination Dr. Fenton confirmed intense retinal congestion with capillary hemorrhage. This condition, so characteristic of nephritis and uræmia led to a chemical and microscopical examination of the urine by Dr. Wolff. The analysis showed only a very small amount of urea, about $\frac{3}{10}$ per cent., and a corresponding diminution of all other solids of the urine. Dr. Wolff, basing his views on the chemical and microscopical examination of the urine, gave his opinion for a diagnosis of pyo-nephrosis with renal calculi, with coexisting uræmia and a probably early fatal result.

Patient died within two weeks of that time with all symptoms of uræmia and well-marked amaurosis. The autopsy was made by Dr. Wolff on April 12, 1889, twenty-one hours after death, in presence of Drs. Fenton and Hampton. All organs were found in a normal condition with exception of the kidneys. Bladder was found normal and containing no concretions. Renal capsules adherent. In both of them the parenchyma was almost totally destroyed. In both kidneys were a number of stones, which were found to be composed of uric acid. The left kidney was about six times enlarged, and the right about four times its normal size.

The presence of concretions or fragments in the urine that could have pointed to the presence of calculi was never observed, although the urine had been frequently examined and observed, both by the patient as well as his medical attendants.

Dr. F. A. Packard: I understood Dr. Wolff to say that the urine in this case was free from any crystalline deposit. On some fifteen or twenty occasions I examined the urine from the kidneys presented two weeks ago by Dr. Daland. There was a great deal of pus and mucus,

but no crystals were found, although it was practically certain that there were renal calculi. These cases would seem to show that crystalline deposit is not an indication of the presence or absence, or of the character, of the stone in the kidney.

Dr. L. Wolff: One remarkable feature about this case was the foreshadowing of cystitis by the amount of mucus. Several gentlemen who had examined the urine considered the mucus to be of vesical origin The bladder, however was found at the autopsy to be perfectly normal, nor was there anything to act as a cause of irritation. The mucus, therefore, has undoubtedly been from the renal pelvis. The reason that the vesical tenesmus was relieved by vesical lavage is evidently owing to the fact that the mucus acted as a foreign body, causing contraction of the walls of the bladder. I was led to the diagnosis of renal calculi by the large amount of epithelial cells from the renal pelvis. I think that these cells are more numerous in cases of renal calculus than they are in catarrhal inflammation of the pelvis or in other conditions of the urinary apparatus. *May* 22, 1890.

---

8. *A single kidney from an old person.*

Exhibited by Dr. G. A. Bodamer.

The patient from whom this kidney was removed was 58 years of age, and had suffered rather more than usual from cirrhosis and fatty liver. He had hemorrhages from the mucous membrane and a marked ecchymosis extending six inches to the right of the umbilicus. The ecchymosis of the abdomen followed severe pain, and at that point there was a swelling. Dr. Deaver saw the case two days before death, but there was some uncertainty as to the cause of the swelling. Last December the man had been treated for typhoid fever. In making the post-mortem it was found that he had a fatty and cirrhotic liver. The hemorrhage was only in the abdominal wall. Three quarts of water were removed from the peritoneal cavity. There were no remains of typhoid fever, but there was evidence of typhlitis. That portion of the intestine and the vermiform appendix were adherent to the abdominal wall. There were a few hard particles in the vermiform appendix. On investigation only one kidney could be found; this was the right kidney. It weighed from twelve to fourteen ounces. The liver weighed six pounds and three ounces. It was rather more fatty than cirrhotic. There was also some aortic trouble. The lung was nearly normal.

Dr. H. F. Formad: I have had a case of a single kidney from a colored boy. This also was the right kidney. I think that it should go on record with the case of Dr. Bodamer. This boy was 13 months old. I have seen six cases of single kidney, and in all of these it was the right.

Dr. J. H. Musser: It would be interesting to know if there were any remains of the left renal artery and veins and also whether there were present both supra-renal capsules. It would also be interesting to know the relation of the weight of this kidney to the entire weight of the body.

Dr. John B. Deaver: A very important observation in this case, which I think can be better brought out by Dr. Musser, who has seen a larger number of medical cases than myself, was this subcutaneous hemorrhage. This is only the second case in which I have seen this symptom. The first case I have referred to in this Society. It occurred in the practice of Dr. Müller, of Germantown. I was asked in regard to the advisability of laparotomy. The history pointed to disease, probably of the liver. The woman was very desirous of being opened in the event of any chance being offered her. Under that understanding the operation was performed. The peculiarity about the case was the enormous ecchymosis in the limbs and about the lower portion of the abdomen. At the time of the operation I also incised one of these masses. It was found to be a blood-clot. The operation revealed the presence of disseminated cancer of the liver. When I saw the case of Dr. Bodamer I at once said, basing my opinion upon the previous case, that I thought this accumulation of blood pointed to the liver, and I thought that it was probably malignant disease of the liver. The autopsy, however, revealed fatty liver. The hemorrhage was very extensive, not only in the superficial fascia, but also in the transversalis fascia and the muscles.

What is the *rationale* of the hemorrhage? In the former case, when I submitted it to this Society, I did not get a satisfactory answer. In these liver troubles it is not uncommon to have hemorrhage from mucous membranes. I should be glad to hear something in regard to the causation of the trouble. I have not seen any reference to it in books on practice of medicine.

Dr. J. H. Musser: It is well known that in the later stages of cirrhosis of the liver ecchymoses do take place. So-called purpura occurs in cirrhotic cachexia. It would be difficult to explain it in this case without knowing something about the state of the circulation, the condition of the heart and vessels and also of the blood. If there were

profound anæmia, or if there were organic disease, I do not think that these ecchymoses indicate any special disease of the liver, but rather obstruction of the portal circulation. When the circulation is obstructed the superficial veins become enlarged, as we see in cirrhosis of the liver. I have no doubt that this tendency to engorgement of the superficial veins occurring in a patient who is cachectic would tend to occurrence of purpura. These hemorrhages do not necessarily occur in the extremities. Now and then the extravasation instead of being subcutaneous will be subpleural, subperitoneal, and subpericardial. In a case of purpura recently under my care there was excessive extravasation of blood under the peritoneum and in the different layers of the fascia, as in Dr. Deaver's case. There was an enormous amount of hemorrhage in the fascia, and in the connective tissue over the ileum and down around the rectum. The *rationale* is, I think, obstructed circulation in a person whose blood is very poor.

Dr. Bodamer: This patient weighed 220 pounds and the kidney weighed fourteen ounces. I did not look in regard to the arteries, but there was no supra-renal capsule on the left side, but there was a supra-renal capsule on the right side. The patient was rather plethoric. There was only one ureter. There was not even a stump of a ureter on the left side of the bladder. In this case the left spermatic vein emptied into the vena cava. There was no albumin in the urine. The kidney was a little congested when removed. *June* 12, 1890.

---

9. *Specimens of renal lesions in animals.*

Exhibited by Dr. A. J. Smith.

The first of these specimens was a large polycystic kidney from a hog. The organ was probably four or five times the usual size of the organ in this animal, and riddled with cysts, the tissue between the latter being almost entirely fibrous in character; while the bulk of the organ was occupied by one large sac, which would hold nearly a pint of fluid, situated in the pelvic and pyramidal portions of the kidney. The specimen was obtained from a friend to whom it was given by a butcher; and there is, of course, no way of judging the age of the animal, although the usually short life of these edible animals is suggestive of the rapid development of this advanced cystic change.

The second specimen was obtained from the same source. It was a

very small kidney, weighing not much more than an ounce. It was said to have been taken from a sheep but little more than a year old. The opposite organ was normal and weighed probably four or five times as much as the specimen in hand. The organ was occupied by a large number of small, dark calculi, ranging in size from that of a millet-seed to that of a cherry, and one large stone measured nearly three-fourths of an inch in diameter. *June* 26, 1890.

---

10. *Amyloid kidney.*

Exhibited by Dr. H. F. Formad.

I wish to show an amyloid kidney of unusual beauty, which I came across yesterday. It is rare to have the kidneys show a pronounced amyloid change, even where the spleen and lymphatic glands present it. In this kidney the application of iodine causes the Malpighian bodies and some of the vessels to come out beautifully. *October* 9, 1890.

---

11. *A case of cystic degeneration of kidneys in fœtus preventing delivery.*

Exhibited by Dr. M. H. Fussell.

My friend Dr. A. H. Mellersh, of Roxborough, called me to see a case of labor on the morning of October 22d, 1890.

To his kindness I am indebted for the privilege of presenting this interesting specimen.

Mrs. X., æt. 28 years, third labor. The first child born healthy and still living. The second child born eighteen months ago. Head and shoulders born without trouble, but considerable difficulty experienced in delivering abdomen. Child lived for a few minutes after the birth, and a certificate of death from "malformation of kidneys" given.

The pregnancy with this, the last child, was not marked with any unusual symptoms, except, perhaps, an unusual amount of abdominal pain.

Dr. Mellersh was called about 4 A.M. on the morning of the 22d. The vertex presented and the head descended and was delivered with-

out trouble, but further progress was not made. The doctor then delivered the arms and made forcible traction, but without delivering the child. At 6 A.M. I was called. All the traction that was justifiable had been made. The woman was etherized, the hand introduced into the uterus, the monstrously distended abdomen of the child being easily felt. The child, of course, was dead. A puncture was made into the abdomen, but only a slight amount of fluid escaped. Further examination made clear that the enlargement of the abdomen was due to a solid tumor—or what felt to the hand like a number of tumors. The opening was at once enlarged, the child partially evicerated. The liver and intestines first came away. One of the tumors was then grasped and the fœtus easily delivered. This result was caused by dragging one tumor ahead of the other and thus diminishing the girth of the abdomen. The child was a rather large male. Scrotum much enlarged by œdema. Abdomen much enlarged, measuring eighteen inches at umbilicus. On examination the following conditions were found: Both kidneys monstrously enlarged—the left measuring 6 by 5 inches, the right 5 by 4 inches. Both keep their original form and are lobulated. They are the seat of cystic degeneration. The entire mass is made up of multitudes of small cysts, ranging from the size of peas to pin-points. On section the cysts are seen to be filled with a clear fluid resembling urine. The left kidney is connected by strong bands with the lower part of the abdomen, being apparently folds of the peritoneum and not adhesions. The hilus is nearer to the lower end. The ureters are plainly seen as small white cords running over the lower ends of the kidneys, and leading into the empty, contracted and elongated urinary bladder. They are patulous. The pelves are buried in the mass of cysts. The blood supply is normal. The supra-renal capsules are enlarged.

The heart is much hypertrophied—about three times the normal size. It feels like a solid mass of flesh, as it in reality is. The ventricles are small and the walls are thickened. The walls of the left ventricle are five-eighths of an inch thick, those of the right three-eighths of an inch thick. The valves are normal, but from the great thickness of the ventricular walls one would suppose they were practically useless. The right testicle is in the abdomen, the left is in the ring. There were no other abnormalities noted. The mother made a good recovery.

Congenital cystic degeneration of the kidneys is a well-known lesion and has been the subject of numberless essays. Though the child is generally stillborn, or dies soon after birth, what is apparently the same condition has been found in adults.

Frequently the condition is connected with various other malformations—hydrocephalus, malformed genitals, etc.

The same mother has been known to give birth to children at different times affected in the same way.

In 1845, Virchow examined a case carefully and gave as his explanation that the original seat of the cyst-formation is in the uriniferous tubules or in the Malpighian capsule. During the progress of the disease these cysts may lose their connection with the tubule from which they started. He considers that the original occlusion is frequently due to infarcts of uric acid salts, though it may be due to an inflammation starting in the pyramids.

He considers also, from the fact that the same woman may give birth to successive children with this abnormality, that the uric acid diathesis

in the mother may be the original cause of the trouble in the child. (Virchow's *Gesammelt Abhandlungen*, p. 870.)

Virchow's explanation is accepted by most of the pathologists of to-day, though I think they repudiate the idea of the uric acid diathesis as a cause. The normal kidney substance is more or less destroyed in all cases, but in most there can be found here and there spots where comparatively normal kidney substance exists.

Uhde, in *Monatsschrift für Geburtsheilkunde*, 1856, gives the notes of a case in which some of the glomeruli were normal, some were filled with yellowish epithelium, and some were entirely cystic, the cysts lined with the epithelium common to the normal capsule. This case, to my mind, is convincing as to the capsules and tubules being the original seat of the cysts.

Though congenital cystic degeneration of the kidneys is so well known pathologically it is extremely rare as a cause of dystocia. Most of the writers mention malformation of the kidney as a possible but rare cause of dystocia. In a rather careful search of the literature I am able to find but eleven cases where the kidneys were sufficiently large to impede labor, and only one case where mutilation of the child was necessary to deliver. Doubtless other cases exist, but I have been unable to find them.

It will be interesting to cite a few of these cases:

Brückner (Virchow's *Archiv*, dxlvi. p. 503) cites the case of a woman who, at two different labors, gave birth to children with cystic kidneys—both children were malformed in other respects. One of the children was dismembered in order to effect delivery.

Duffey (*Med. Times*, 1866); third pregnancy; breech presentation; cystic kidneys; anencephalous monster with malformed hands and feet.

Siebold (*Monatsschrift für Geburtsheilkunde*, 1854); hydrocephalic child; much difficulty in delivering child.

Carmack (*Lancet*, 1845); child born at term; both kidneys of cystic degeneration; much difficulty in delivering child.

Oesterlen (*Zeitschrift für Geburtskunde*) gives the history of a case and a good cut of the child with the kidneys in position.

For anyone curious to look up this interesting subject there is an excellent bibliography in *Dictionnaire des Sciences Méd.*, vol. iii., 3d series, p. 294.

This case is the first of the kind presented to this Society. It differs from most other cases in being in all other respects than the kidneys and associated lesions, a perfectly normal child. The hypertrophy of the heart in this case is either unusual or it has not been noted in other

cases, for in none do I find it mentioned. In some of the cases the heart is said to be normal, in others it is not specially mentioned. There seems to me to be every reason for the hypertrophy of the heart in such cases; for, although the heart of the fœtus is only secondary in supplying the blood to its different parts, what work it does must be many times increased by the great resistance offered to the circulation, not only in the kidneys themselves but in the whole abdomen and chest, owing to the pressure made by the greatly enlarged kidneys.

The practical lesson to be learned from this case is—where difficulty is experienced in delivering the abdomen of the child, at once anæsthetize the woman, introduce the hand into the uterus and find the cause of the detention. If there is an enlarged abdomen of the child, and justifiable traction has been made, at once puncture the abdomen. In this case the instrument was an ordinary pair of shears; an opening was made in the chest, hand introduced into abdomen of child and the operation continued as above described. I cannot conceive of an obstetrician pulling and hauling at the woman for ten hours, as was done in one of Brückner's cases, and final dismemberment of the child, when evisceration is so easily and speedily performed.

Dr. Guitéras expressed himself as interested in the condition of the circulation in this fœtus, especially in the double cardiac hypertrophy. In this instance, in seeking to explain the presence of this hypertrophy, it does not seem probable that there is any contraction of the arterial area of the kidneys to which to refer the lesion; on the contrary, the total area of renal circulation in this case is probably much increased over the normal, and in consequence there is no obstruction offered in this feature to the onward flow of the blood. It seems more probable that the obstructive cause from which the hypertrophy developed was the pressure upon the aorta by these enormously enlarged organs. The double form of the hypertrophy is of course due in this view to the fact that the open foramen ovale allows communication of the arterial pressure with the right as well as the left side of the heart.

It would be of further interest in this case to make examination of the condition of the vessels in the upper portion of the body, particularly about the arch of the aorta, in order to determine their coats, as to the existence of especial development or hypertrophy. Generally, too, there should be more development of the parts of the upper portion of the body, these being in communication with the freest circulation; to superficial examination this does not seem to be the case. Possibly, however, there is an under-development of the lower extremities,

although it cannot be said to be at all well marked. Probably the best means of determining the presence of any special development in the upper parts would be about the points of ossification.

*November* 13, 1890.

---

12. *Renal anomalies.*

Exhibited by Dr. H. F. Formad.

The first specimen presented by Dr. Formad was a small body, somewhat the shape and size of an adrenal, which constituted the third kidney in the body of a case recently examined by him. There are very few records of this anomaly on record in literature; and there is but one specimen in the museum of the University of Pennsylvania (also unrecorded). The histology of this body is that of ordinary renal tissue. Its gross appearance is by no means that of a kidney, looking much like a supra-renal capsule in size and shape. It was situated in close proximity to the adrenal of the side upon which it occurred, attached to the latter organ by a few filaments, probably of the nature of bloodvessels. There was no ureter apparent to this structure.

The same case was marked by the presence of cheesy degeneration of the adrenal of the left side; that of the right side was indurated and contracted, and somewhat cheesy also. No tubercle bacilli were found in the tissues of these degenerated organs. The individual in whose body these lesions were found was a negro, and no bronzing of the skin was, of course, made out. There was no tuberculosis of the lungs in this case.

A second specimen of renal anomaly was the occurrence of a single kidney in the body of a man, æt. about 50 years, dead of apoplexy. This organ did not show any abnormality in its construction, and was found upon the right side, as is usually the case in the instances of the presence of single kidneys. In this instance there was noted an absence of the adrenal body on the right side, as well as of the kidney; there was but a single ureter and but one ureteral orifice into the bladder. The kidney which was present was found situated slightly lower than normal, and was surrounded by rather loose attachments. (This was the fifth specimen of single kidney presented before this Society during the past two years.) *November* 13, 1890.

LIBRARY OF THE
COLLEGE OF PHYSICIA

13. *Specimens from a case of uræmia.*

Exhibited by Dr. F. A. Packard for Dr. J. H. Musser.

Dr. F. A. Packard brought before the Society the heart and kidneys from the following case:

J. B., æt. 47 years. He was exposed to weather a great deal, having served in the army and navy. Steady drinker. In April last worked in the rain, two days later had swelling of arms and legs—lately a general anasarca. Urine decreased in quantity. Was in German Hospital. During this attack had a great deal of headache.

August 1st, passed urine frequently. August 3d quantity diminished and August 4th dropsy appeared and soon became general. Could only read very large type. No pain or headache. No nausea or vomiting. Some râles in the chest. No valvular heart murmur. Urine decreased in quantity and contained epithelial casts with numerous granular and oily casts. August 14th he began to be delirious at night. This gradually grew worse, until he was delirious both day and night, and persisted until he died. He had several delusions, but the most fixed was that he was to be murdered by his brother-in-law. Patient died November 16, 1890.

*Autopsy.*—Body pallid and emaciated. Œdema of legs. Puffy face.

*Liver:* Normal in size; capsule normal; duct patulous; color, dark yellow and mottled. Central vein of acini distinct. Lobules pale, and acini. Weight, five pounds.

*Stomach:* Dilated; contains clear fluid. Mucous membrane slate-colored.

*Intestines* (large and small): Normal.

*Spleen:* Hard and small.

*Kidneys*: Both over-sized; each weighs six ounces. Capsule removed rather easily. Surface yellowish red and mottled. Cystic. Pyramids dark red and cortex small. In left kidney scars.

*Lungs:* Right pleural cavity contains considerable fluid. Adhesions posteriorly of both lungs. Right lung partially collapsed. Lungs normal.

*Heart*: Hypertrophied, weight fifteen ounces. Left side much hypertrophied. Valves competent. Some old thickening at the base of the mitral. Pericardium normal. Coronary very atheromatous. Aorta very atheromatous.

*Brain:* Of normal weight and of pallid appearance. General œdema

of pia mater. Patches of pachymeningitis along great longitudinal sinus. Ventricles filled with serum. No gross lesion.

*Eyes* examined by Dr. de Schweinitz.

Dr. Packard said that in this instance the especially interesting feature was the long continuance of delirium, the intervals of rationality being not especially frequent and averaging only about a half-hour in length each, from the middle of August until well into November, when death occurred. During this period there seems to have been but little if any headache, and no nausea. The temperature was, as a rule, subnormal.

The especial points of the case seem to exist in the relations of the clinical with the pathological appearances—the existence of the above symptoms of Bright's disease, with marked albuminuric retinitis and with a persisting delirium, on the one hand, and on the other the associated lesions of the heart and the kidneys, the latter being the seat of tubular and interstitial nephritis. *December* 11, 1890.

14. *Sarcoma of kidney.*

Exhibited by Dr. Ball.

Dr. Ball exhibited a tumor of the left kidney, removed from the body of a boy, æt. 2½ years. The mass was of the general outline of the kidney, red in color and soft. It weighed somewhat more than two pounds, measuring about six inches in the long axis, three or four in its lateral diameter, and about the same in thickness. Under the microscope it presented the appearance of a sarcoma.

The principal clinical feature in this case was a very frequent micturition (not bloody in character). About ten weeks before death a small, painless, fluctuating tumor about the size of an English walnut was noted in the left lumbar region. This tumor rapidly increased in size, presenting a swelling which extended toward and beyond the median line of the body anteriorly. While there was no true cachexia, toward the close of life the skin presented a very blanched and waxy hue. Attacks of dyspnœa were present a few hours before death.

At the autopsy nothing of interest was developed save this sarcoma of the left kidney, which almost filled the entire abdominal cavity; the intestines were adherent to the capsule of the tumor. The other kidney was apparently normal and there were not noted any metastatic foci of growth. *December* 11, 1890.

15. *Rupture of the bladder.*

Exhibited by Dr. F. Gummey.

I have here a specimen of ruptured bladder which during life gave rise to some rather peculiar symptoms. The patient was admitted to the Pennsylvania Hospital on the 22d of this month, four days ago, stating that he had been unable to pass any urine for two days. He was catheterized, but only about eight ounces of bloody urine were removed. He complained of intense pain in the epigastrium; temperature was normal; pulse 128 to the minute, and respirations 20; there was no history of injury. A few hours before his death he acknowledged that the captain of the ship upon which he had been employed as seaman had kicked him in the privates. Upon post-mortem examination by the coroner's physician there was found a rupture of the bladder for an extent of about two inches. The abdominal cavity was filled with blood and urine. All through the time he passed in the hospital he had intense desire to urinate, but was unable; and the only urine passed was that withdrawn by catheterization—a small amount and very bloody. About two hours before his death the temperature rose to 100.4°. He had worked after the injury had been inflicted. The rupture, as may be seen, was in the anterior wall of the viscus; there was but slight peritonitis—only beginning. The injury was inflicted on Friday night and the patient lived until Monday. At no time were there any symptoms of shock. *February* 26, 1891.

---

16. *Contracted kidneys.*

Exhibited by Dr. E. L. Vansant.

I bring these specimens simply as well-marked specimens of the small kidneys and large heart to be met in chronic Bright's disease. The patient, J. B., was an inmate of the medical wards of Blockley, a cobbler by trade, æt. 55 years. His trade was responsible for a marked depression of the sternum—so large that a small fist could have easily been accommodated in it. This depression forced the heart to the left and the apex-beat could be felt and heard at the mid-axillary line, and a faint mitral systolic murmur could be heard. The beat was very

strong and forcible; pulse full and tense, and the temporal arteries were so prominent that the pulsation could be seen in them. On admission his eyelids and conjunctivæ were œdematous, but there was very little œdema elsewhere. He was passing a very small amount of urine, and two days after admission he became delirious and had a uræmic convulsion. This was followed by Cheyne-Stokes respiration and coma for several hours. He recovered from this convulsion and lived for several weeks, the urine increasing in amount. Although the urine was examined microscopically at least ten times, but one small granular cast was discovered. On admission the urine contained a small amount of albumin, but later it was difficult to obtain a trace. For a few days before death he secreted not more than five or six ounces in the twenty-four hours. The specimens are good examples of granular kidneys, quite small and firm; and the heart is considerably hypertrophied on the left side, with a wide mitral opening and somewhat thickened mitral leaflets. *March* 12, 1891.

---

## 17. *Pyonephrosis.*

Exhibited by Dr. J. H. Lloyd.

I have here a specimen of pyonephrosis with a very much enlarged ureter, forming a veritable pus tube. The patient was a woman in the Philadelphia Hospital. She was sent from the venereal wards, totally blind, to the nervous wards because of a hemiplegia. She complained of considerable pain in the abdomen. Pus was found in large amount in her urine; and there was some ammoniacal change in the excretion, even when fresh. The patient died apparently from exhaustion.

Upon making an autopsy the corpus striatum of the left side was found to be the seat of a large area of softening, accounting for the hemiplegia. The kidney, as may be seen, is very much enlarged and the seat of extensive suppurative change; the pelvis of the organ was converted into a pus sac and the ureter was dilated, the walls thickened, and the inner surface was freely suppurating throughout its course.

The woman had several atheromatous patches in the aorta and left side of the heart; and this not improbably led to the cerebral softening through embolism. She was 44 years of age. The arteries at the base of the brain were in good condition. She had had hemiplegia for six weeks before death. As to the origin of the renal condition, it is not

improbable that it is the result of upward extension of a suppurative process from the bladder; perhaps at some time or other there had been a cystic calculus, or a gonorrhœal infection.

The other kidney was a large white kidney. There was a history of syphilis.

Dr. Noble said in relation to the etiology of the renal condition that he believes it is usually due to cystitis with extension along the ureters. He stated that he had, however, met one case in his practice where the same condition seemed to have resulted from pressure or traction upon the ureter by an enlarged uterus. There was another case, too, which seemed to be dependent upon pressure upon the ureter by an intra-ligamentous ovarian tumor. Of course, there is not much likelihood of the cerebral condition being due to the suppurative condition of the kidney. He should look upon the two states as being simply coincident.

Dr. Baldy took exception to the remarks of the last speaker in that he did not believe that such a suppurative change could possibly be dependent upon pressure alone.

Dr. Lloyd said in conclusion that in all cases like this there certainly must be some primary point of suppurative infection—that simple pressure could not be productive of anything but a hydronephrosis. It seemed to him that in the case presented the pyonephrosis was due probably to a cystitis, although what was the cause of the cystic inflammation is a question. *March* 26, 1891.

---

### 18. *Sarcoma of the kidney.*

Exhibited by Dr. H. F. Formad for Dr. Hoffman.

The specimen I present to the Society is one of sarcoma of the kidney, and this large mass I hold is the left kidney, the right one being also attached to the one side.

I do not know the history of the case from which the specimen was removed. It comes from a woman of middle age, who was supposed to have had an ovarian tumor, and an operation was performed with the view of its removal. On opening the abdomen, this mass was seen, but was not removed. The woman died, however, and then the tumor was found to be a kidney. It presents a mass of nearly four pounds weight, retaining the shape of the kidney; it was adherent all around. On section it presents a uniform, homogeneous mass of red granular ap-

pearance; and in a general way has preserved the renal appearance. The ureters are still intact in both organs, and the tissues about the sarcomatous left organ are uninvaded by the new-growth. There was found nothing in the body that in the least indicated any metastasis, no secondary deposits anywhere, and, in other words, the disease of this organ was clearly a local one. During life there was a continuous hæmaturia, at least one that was more or less repeated for many months.

Sarcoma of the kidney appears to be a disease quite frequent in occurrence; at least it is met not infrequently, judging from the number of such specimens finding their way into my possession from time to time, and which I sometimes find in the bodies of cases in whom it was not at all suspected. In all the cases I have seen it affected but one kidney, usually the left. It is characterized by a swelling in the corresponding region of the abdomen, by hæmaturia, lasting for a long time, not continuous but frequently repeated; there is no pain, at least none attracting the attention of the physician, except that from pressure from the bulk of the tumor. It grows at first quite slowly, but it has been observed that toward the close of the case the growth is more rapid.

I have specimens in my laboratory ranging from three to eleven pounds in weight. It appears as frequently in the male as in the female. The nature of the growth is interesting. In none of the cases I know of was there more than a mere local disease, without generalization, metastasis, or general invasion of the body. There was perhaps a slight swelling of the neighboring lymphatic glands; but this enlargement is apparently due to a hyperplasia of the lymphatic glands, of their elements, and is not the result of invasion of new sarcoma cells. The tumor produces no other disturbance in the organism save from the weight and from an occasional severe hæmaturia. Microscopically these tumors present the ordinary characteristics of the sarcomata; I did not examine this one in particular—but they usually possess an alveolar arrangement. Sometimes they are mixed, spindle- and round-celled sarcomata. The elements are usually small in size; the growths are often very vascular, and hemorrhagic infarcts are now and then found in them, causing thrombotic areas. The capsule is usually limited and I am surprised that in the present case there were adhesions, since, as a rule, the capsule is quite smooth and without any evidence of adhesions.

Why, in these cases, do we have a tumor of malignant character, a sarcoma of alveolar type, without metastasis? None of those within my knowledge have been accompanied by the slightest evidence of metastasis; and I do not believe that such generalization occurs in these cases. The same is true of the sarcomata of most of the genito-

urinary tract in relation to metastasis. Why? I do not know; probably it is from some peculiar distribution of the bloodvessels or lymphatics, or else the tumor cells are of some peculiar nature which does not permit their transferrence or their growth in other parts of the system. I repeat: These tumors of the genito-urinary tract are always sarcomata, never cancers, and they never give metastasis. They are, it is true, sometimes called cancers; but cancers are tumors which develop from good epithelial cells from the epiblast and hypoblast. The epithelium of the genito-urinary system, excluding that of the bladder and urethra, is derived from the mesoblast, and greatly partakes of the nature of connective tissue, so that in tumor formation the new cells take on the type of embryonal connective tissue and become sarcomatous. In the embryological derivation of the genito-urinary system, the cells, the off-shoots partly of the epiblast and partly of the hypoblast, partake more of the type of the epiblast; thus it is likely, even if the Wolffian bodies and ducts should be derived from the epiblast, that new growths starting in their adult representatives, although quite like connective tissue in their histology, should not give metastasis. The epiblastic structures on the surface of the body, the lining of non-secreting surfaces, as the lining of the mouth, œsophagus, rectum or bladder—none of these give rise to malignant tumors which are metastatic in nature. The squamous epithelioma, the tubular epithelioma, all but the carcinoma of the mammary gland, give rise to growths which are simply local in their effects, producing local tissue destruction, but never sending embolic masses into the interior. I look then upon these tumors of the genito-urinary tract, apparently malignant in their nature and histology, as really non-metastatic, this last peculiarity probably being dependent upon some essentially embryological nature of the cells of the structures from which the new growths arise.

Dr. Smith: I must take exception to Dr. Formad's opinions on almost every point, in that I believe sarcoma of the kidney, as well as sarcoma from any other part of the genito-urinary system, to be metastatic, and inasmuch as I believe in distinctly epitheliomatous neoplasms of these parts, which he looks upon as invariably free from primary epithelial new-growths. So far as my own personal experiences reach, my views are of no value, except in relation to cancers of the uterus, which I have known to give metastasis. From statements of surgical friends, however, and from examination of text-books and current literature, quite contrary views have been forced upon me. Taking up first the question of metastasis, it must be granted that sarcoma of the kidney does not frequently show such a tendency, but that it does so occasionally must

be maintained. Arising in the kidney this neoplasm is easily limited from ready extension by the blood circulation, because of the very size and arrangement of the minute vessels of the kidney; particularly is this the case where the entrance of the cells of the tumor is established in the arterial portion. The capillary tufts exert a very decided influence on retarding the wandering tumor cells from further passing along with the hæmic stream. For this reason the growth of the tumor is in many cases—not all, of course—limited to growth directly by infiltrating the tissue zones about the primary focus. In this way often the entire organ becomes evenly filled with sarcoma structure, limited only by the capsule of the organ. Before transferrence from this encapsulated tumor mass, with but a single exit in a comparatively small vessel—the renal vein—has had chance to occur, as a rule the patient has succumbed from the side effects of the disease. While I would account for the numerous instances of non-metastatic sarcoma of the kidney in some such manner as this, there are cases where metastasis does actually occur. The metastasis is evidenced by secondary deposits in distant organs and by the no less sure testimony of intravenous tumor masses found in the renal vein or in the ascending vena cava. Many of these instances are described in literature as cancerous, and are regarded as examples of soft cancer. Without going into detail I may refer to the cases of Lepine (*Lyon Méd.*, July 22, 1888), Wesselowski (*Med. Reg.*, July 14, 1888), Tison (*Bull. de la Soc. Anat. de Paris*, October 12, 1888), Anderson and Coats (*Glasgow Med. Journ.*, January, 1888), Hauck (*St. Louis Cour. of Med.*, August, 1888), Lancereaux (*Gaz. des Hôp.*, February 18, 1889) and Lincoln and Lamb (*Journ. Amer. Med. Assoc.*, March 23, 1889). Granting that these tumors be sarcomatous instead of soft cancers, as many are described, the existence of secondary deposits from the first step without the neoplastic organ, in its efferent vessel, to such positions as the liver and lungs is a matter of record, and all the cases brought forward in which no metastasis was noted cannot overthrow positive statements of facts. Denying the possibility of primary cancer of the kidney because of the character of the embryonal origin of this organ, how can one reconcile the plain announcement by observers, as Pilliet (*Bull. de la Soc. Anat. de Paris*, No. 23, 1889), Girode (*Ibid.*, June 25, 1889), of the histology of certain primary renal tumors as soft cancers, or Pescher (*Ibid.*, No. 12, 1888), of the occurrence of a *hard* cancer of the kidney? Adenomata, also epithelial tumors, have been time and again described as occurring in the kidney, and have been occasionally noted as becoming cancerous. The truth of the matter seems to me that these tumors of the kidney are to be looked

upon as metastatic, and that the renal epithelium is not bound to assume the type of embryonal connective-tissue tumors because of its mesoblastic origin, but may be the parent of true epithelial tumors. The same is true of the rest of the genito-urinary system; both sarcomata and cancers are possibilities, and both may be metastatic. Cancers of the womb, as any gynecologist may testify, are metastatic, and a recent case in Blockley, where secondary deposits were found in the kidneys and liver, is *apropos*; sarcomata of the testicle, another portion of the exclusive mesoblast, are by no means infrequently metastatic, and have been so taught by men of such pathological eminence as Gross, the father of pathology in this country, Agnew, Rindfleisch and Billroth.

The frequent failure of metastasis in the tumors of this system of the body is not to be laid to their embryoblastic derivation, else the cancers of the bladder, a viscus whose wall is mesoblastic and lined with hypoblastic epithelium should be malignant as those arising from other hypoblastic epithelial cells; rather should circumstances of arrangement, of encapsulation, of peculiarity of circulation be looked upon as exerting an influence in retarding their generalization.

Dr. A. J. Downes: I am not so sure of the non-metastatic nature of these sarcomatous tumors of the kidneys. Several weeks ago there was published in the *Medical News*, I think, a report by Brokaw, of St. Louis, of a case of sarcoma of the kidney of a child from whom, as I recall the case, the tumor was removed; in this instance there occurred subsequently, as shown by the autopsy, a number of metastatic deposits.

Dr. Hamann stated that there had recently been a case of sarcoma of the kidney in the German Hospital in a boy, æt. 10 years. The condition was not clearly recognized during life because of the absence of the usual urinary symptoms of renal sarcoma. The tumor was found, however, at the autopsy to be a primary sarcoma of the kidney, and there were metastatic nodes in the liver and lungs, and marked invasion of the tissues surrounding the kidney.

Dr. J. B. Deaver corroborated Dr. Hamann's statement. The boy had apparently been healthy until within ten months prior to his death. There was a large tumor in the left side of the abdomen when he was admitted to the German Hospital, but because of the lack of urinary symptoms the case was suspected to be one of splenic enlargement. At the autopsy the mesenteric glands were found invaded and all the abdominal viscera were involved. At present there is another child in the same institution whose case suggests the same condition.

Dr. Formad cautioned the Society in such cases in children to strictly distinguish between congenital and acquired tumors; in the former

class multiple sarcomata are not rarely present when the kidney is the seat of sarcomatous involvement, and there is grave danger of mistaking multiplicity for metastasis. *April* 9, 1891.

---

19. *Lesions of gout.*

Exhibited by Dr. A. A. Eshner for Dr. E. L. Vansant.

H. H., æt. 25 years, a native of Philadelphia, was admitted to the medical wards of the Philadelphia Hospital on March 25, 1891, with pain, swelling and redness of the metatarso-phalangeal joints of both great toes, which had existed from the previous day. The left ankle-joint was swollen and tender, and in turn the right ankle-joint became similarly involved. The pain continued for about four days, to disappear quite suddenly. At the end of this time, headache and vertigo became manifest; the appetite was lost; there was a bad taste, with nausea and vomiting. Some stiffness of the joints originally involved remained. The pains were most severe late in the day and at night. The urine, of which but twelve ounces were passed in twenty-four hours, contained a considerable amount of albumin and a number of granular casts. On April 3d the eyelids were puffy and the patient complained of headache; there were also nausea and vomiting. He was given a hot-air bath, a sixth of a grain of pilocarpine subcutaneously and a sixth of a grain of elaterium by the mouth. The symptoms not being favorably influenced, at the end of three days the treatment was changed to calomel, caffeine and digitalis, with citrate of potassium in an effervescent draught. The stomach was so intolerant that the digitalis was discontinued and the caffeine administered subcutaneously. Not even peptonized milk was retained. The vomited matters were bile-stained. Cocaine and carbolic acid were ineffectual in restraining the vomiting. On the morning of April 10th the patient died suddenly, without the intervention of coma, convulsions or marked delirium. Vision was said at times to have been defective. No family history of gout or rheumatism was obtainable. The patient admitted having had gonorrhœa in 1888, but denied other venereal infection. There was a history of only moderate alcoholism. There had been previous attacks, in which the small joints of the hands and feet were red, painful and swollen, the first in 1881, after exposure to cold and damp. Subsequent attacks recurred twice a year—in the autumn and spring, usually setting in after

exposure and lasting about two weeks. An attack followed three days after the urethral discharge was observed at the time of the gonorrhœal infection, two joints of the ring and middle fingers of the left hand and the metatarso-phalangeal joints of the great toes being involved.

At the autopsy the kidneys were found red, small, and contracted, containing numerous deposits of urates, in both pyramidal and cortical tissue. Each kidney weighed 3.5 ounces. The heart was hypertrophied, especially its left ventricle, and weighed thirteen ounces. Within the auricles were numerous small collections of urates. The spleen weighed five ounces and contained small nodules, which may have been deposits of urates surrounded by tissue of inflammatory origin. At the apex of the left lung were a number of hard nodules, representing calcified tubercles or deposits of urates. Within the prepuce also was a considerable deposit of urates.

Dr. Eshner stated that he had made a number of sections of the spleen and kidneys from this case. The most striking thing, perhaps, is that in the kidneys the stain has been retained but feebly, although all the sections from both the spleen and the kidneys were stained under the same conditions. The stain was rather diffuse; the cellular elements of the organ took the stain but feebly; under the capsule was a nodule which took the stain strongly and was noted under the microscope to be composed of connective tissue. The intertubular connective tissue is also in excess. The spleen shows practically the same changes in the overgrowth of the connective-tissue elements. The capsule is not especially thickened, but the trabeculæ and the coats of the vessels are distinctly so. *April* 14, 1891.

---

### 20. *Kidney tuberculosis.*

Exhibited by Dr. A. Stengel for Dr. J. H. Musser.

The specimens which I present are from a patient who was under Dr. J. H. Musser's care at the Philadelphia Hospital. I shall speak only of the pathological lesions found at the post-mortem table, as I know very little about the clinical history, which Dr. Musser had intended presenting fully to-night.

The patient, a colored man, æt. 29 years, was operated on some days before death by Dr. J. B. Deaver for the discharge of purulent material located in the region of the left kidney.

At autopsy there was found a general miliary tuberculosis of both lungs, most marked in the left, in which there was, moreover, a consolidation of the upper lobe. Both pleuræ were in a state of recent inflammation and covered with lymph, but contained no tubercles, nor was there any effusion. The peritoneum was at once seen to be the seat of tubercular invasion, and careful examination demonstrated the focus from which this arose and spread to be this enlarged left kidney. There was no abdominal fluid. The kidney, as you see, is very much enlarged—weighs twenty-nine ounces, is about six inches long, four broad and three thick. On section it is seen to be honeycombed with pus pockets of the typical pyramidal shape, its substance dense, almost cartilaginous, and the cavities filled with cheesy, purulent material. The pelvis is not particularly enlarged, if at all, but on the mucous surface are seen numerous tubercles, almost entirely covering it. The same condition extends into the ureter and bladder, both of which are densely studded with tubercles, and both having much-thickened walls. The prostate was cheesy in the centre, but showed no fresh tubercles; the testicle and epididymis were healthy, but the seminal vesicles were enlarged, cystic, and contained small collections of puriform material. As has been said, the peritoneum in the vicinity of the left kidney was very much involved in the process, containing numerous small miliary tubercles and being covered, more or less, with deposit of lymph. From this region as a centre the involvement was less and less marked as we passed outward to other portions of the abdominal cavity. Over the pancreas and even in its substance were seen similar granulations, with one or two in the latter situation converted into soft cheesy points. The other kidney was enlarged, acutely swollen, and had imbedded in its substance a small cheesy node about the size of a small marble. There were besides several small miliary tubercles. The ureter of this side was unfortunately not examined. The liver presented no evidences of tubercular involvement; nor did the spleen, which was somewhat enlarged and tough. The peritoneal lymph glands were most prominent, enlarged, and cheesy. The post-peritoneal glands were smaller, but still distinctly enlarged and prominent. There was found in the region of the lower lumbar vertebræ and the upper portion of the sacrum a collection of purulent cheesy material of the character of that so commonly observed where there is bone disease. This had its origin in and was due to breaking down of the lumbar vertebræ, and the neighboring structures, and was of tubercular nature. The bone destruction had not progressed to any serious extent, but the anterior sur-

face and edges of the articular surfaces of the vertebræ were extensively eroded.

Lastly, the spinal cord and brain were examined. In the latter a small collection of granulations, apparently tubercular, were found on the pia covering the cerebellum. The cord in the region of the bone disease showed no evidence of having suffered from extension of the disease.

This is a most instructive case in very many respects and would serve as a text for several points of discussion, but I wish to speak only of two: First, the manner of spread of the disease in this case; second, of tuberculosis of the genito-urinary tract in general.

As to primary seat, it is natural to look to the lungs for such in the presence of genito-urinary tuberculosis; for, though the latter may be primary, it is so much more frequently due to metastasis from the lungs or elsewhere, that we naturally look for such lesions. In this case it will be seen at once that the lung involvement is of recent date—a miliary tuberculosis with pneumonic consolidation, and was not, therefore, a focus of origin. The appearance of the kidney presents that of a secondary tuberculosis likewise, and I believe it to be most probable, that this disease began in the bone involvement and thence spread to the kidneys, after which, by a discharge of the infective agency through the blood, either from the kidney or from the original focus—the former more likely—the general tuberculosis of the lungs and other organs ensued.

The subject of genito-urinary tuberculosis in its relation to the same diseases elsewhere, and the question of the manner of spread along the genito-urinary tract are yet by no means definitely settled, though we owe much to Steinthal (*Virch. Arch.*, 100, 1885) and to Krzywicki (*Beiträge zur path. Anat.*, v. Ziegler, iii., 1888) for their excellent articles bearing on these points. The points of interest are whether tuberculosis of the genito-urinary tract may be primary, and, if so, what portion of the tract is first involved and how it extends. The views of pathologists as to the first may be taken as pointing to the frequent occurrence of tuberculosis primarily in this tract. Orth designates the papillæ of the kidney as the seat of primary tuberculosis of this organ. Much more frequently, however, primary tuberculosis of the genito-urinary tract would seem to begin below. It may start as a primary disease of the testicle, or, what is much more common, the epididymis; or it may begin in the prostate gland. In woman it may take origin in the tubes, the ovaries, or uterus. Krzywicki arranges the organs in the order of frequency with which they are affected primarily, as follows: In man,

prostate, epididymis and kidney; in woman, the tubes, kidney, uterus, and vagina. He particularly remarks the common involvement of the prostate, having seen it affected in fourteen of fifteen male cases of uro-genital tuberculosis, and also the fact that it is the epididymis rather than the testicle which is the primary seat.

As to the spread of the process along the uro-genital tract, it may in the first place be remarked that this depends on the original seat, but the determination of the last point has been difficult in some cases and attended with much difference of opinion. Much of this is due to the fact that both the prostate and epididymis are characterized by a tendency to undergo speedy caseation, and in consequence have often been looked upon as the primary focus through ignorance of this fact. Of the pathologists, Rokitansky, Klebs, Birsch-Hirschfeld, Cornil and Ranvier recognize the occurrence of descending tuberculosis, beginning in the kidneys and descending to ureters, bladder, prostate and epididymis, but regard this a much rarer condition than the ascending variety. Virchow and Förster regarded the lesions in kidney and testicle to be simultaneous. Of clinicians, Ebstein, Lancereaux, and Koster regard the ascending the commoner; while Vogel and Guébhard take the opposite view, and Stopfer and Schmidtlein find both (of equal frequency?). Steinthal in twenty-four cases of uro-genital tuberculosis finds no lesion in testicle or prostate in nine, and infers that the descending process is much commoner than had been previously thought. Ziegler is not explicit, but seems to regard the ascending the much commoner mode of progression. Weigert and Hanau record a few cases of the descending form, and Krzywicki, of twenty-nine cases, saw two in which the process began in the kidneys and travelled downward. The evidence of all observers taken together indicates that descending tuberculosis is not uncommon, though it must hold second rank to the ascending form. The possibility of the communication of the disease from man to woman has been considered by Hanau, and he has instituted experiments with guinea-pigs to determine whether it is possible to cause tuberculosis of the genital tract by injection of tuberculous material. Several pigs were injected by the urethra and vagina, but in one only was there any result. In this case ulceration of urethra and bladder with tubercular nodules of inguinal and retro-peritoneal glands resulted. A point of importance in surgery is found in the fact that the tubercular disease may start primarily in the kidney, descend to the testicle, and in the absence of lung disease be regarded as a case of primary tuberculosis of the testicle. An operation under such circum-

stances may be speedily followed by a general infection, perhaps favored by the operation. This unfortunate result has occurred several times.

As to the frequency of involvement of the genito-urinary tract in lung tuberculosis, there is little definite information. Steinthal found it in 18 cases out of 58, or 45 per cent., while Krzywicki found but 5 per cent.

Dr. J. B. Deaver: The operation referred to by Dr. Stengel was done merely as a temporary measure. I should not have considered it as at all justifiable to have done more than simply to have evacuated the abscess, inasmuch as the patient was in a condition of general tuberculosis and could not possibly have been benefited by a nephrectomy. The point of especial interest in the case, recognizing the tubercular condition, was the diagnosis of the position of the abscess, the pyuria pointing to the existence of a pyonephrosis, while the physical signs indicated that the abscess cavity was free from the kidney, or at least somewhat higher up in the loin.

Dr. John H. Musser: When the patient was admitted to the ward there was no doubt of his having pulmonary tuberculosis. The physical signs and the examination of the sputum indicated this. In addition to the lung symptoms he complained of pain in the abdomen, situated below the ribs on the left side and particularly about a point in the left mammary line two inches above the transverse umbilical line. On investigation a rounded tumor was distinctly felt, which was dull on percussion. The dulness of it was continuous with a dulness, the upper border of which was found in the nipple line reaching as high as the seventh rib, in the anterior axillary line to the sixth rib, in the posterior axillary line to within an inch of the angle of the scapula. This dulness extended as far back as the vertebral column; its lower portion behind was continuous with the dulness in the loins; laterally the dulness extended to the ilium, its anterior portion being over the tumor. In other words there was an extended area of dulness which indicated an abnormal accumulation of solid contents in the lower portion of the chest, either above or below the diaphragm, or both. Was an effusion present within the thorax? Notwithstanding the fact that in the seventh interspace the aspirating needle drew off a small amount of pus, it was thought that the disease was below the diaphragm, because small friction sounds and feeble respiratory murmur were heard, while fremitus, though present, was enfeebled. The collateral signs did not account for the extensive dulness. My reason for thinking that this extensive area of dulness was due to subphrenic disease was because of the absence of physical signs of thoracic disease, and because of light which I had

gathered from another case of subphrenic abscess. In that case there was a similar enlarged area of dulness due to the collection of pus below the diaphragm. In the present case, on first examination the position of the abscess, for such the aspirator showed it to be, was not determined because the first specimen of urine examined did not contain pus in quantity sufficient to direct attention to the kidney. The pus the aspirator drew off was most offensive, so that it seemed that it must be an abcess communicating with an air cavity. The physical signs of pyo-pneumothorax subphrenicus were looked for in vain. Nevertheless, at first, the urine being negative, I thought there was possibly a perforating ulcer of the large intestine with secondary abscess. Renewed examinations of the urine revealed at once the presence of a pyelitis, and it was then plain that the tumor was of renal origin and due to the associate process of the lungs—tuberculosis. Bacilli could readily be found by Dr. Allyn in the urine, which had been examined.

The case is of particular interest: First, on account of the position of the tumor; second, because of the resemblance to empyema on the one hand and to a simple subphrenic abscess on the other; third, because of the absence of genito-urinary symptoms; fourth, because of the presence of bacilli in the pus, etc., in the urine. *June* 25, 1891.

---

### *b.* FEMALE GENITAL ORGANS.

#### 21. *Ovarian cysts.*

Exhibited by Dr. J. LEIDY, JR.

Dr. Leidy presented twelve specimens of ovarian cystoma with the contents, varying from 73 to 12 pounds in weight.

A microscopical examination was made from over forty specimens which had come under the observation of the writer, for the purpose of determining, if possible, any distinct microscopic characters which could be looked upon as pathognomonic of any special variety.

It was noted that a variety of cells of columnar, ciliated, and squamous forms were to be found in the cystic fluid; from numerous observations it was noted that the columnar, ciliated columnar and goblet cells were more common in the small cysts, while the squamous were more numerous in the large cysts. This was explained and set down

wholly as a mechanical process; as the cysts enlarged the secreting surface spread out, and with constant friction the cilia first disappeared, secondly the columnar cells, leaving the squamous or pavement epithelium to form the lining membrane.

The writer, from the large number of specimens, was unable to find any special cell as characteristic. The so-called "ovarian cell of Drysdale" was found in all cysts associated with the uterine appendages, and was found in several cases of ascites due to malignant disease in adjoining organs. *May* 10, 1888.

---

22. *A large ovarian cyst with fistulous communication into, and partial escape of contents through the bowels; death; autopsy.*

Exhibited by Dr. H. F. Formad.

This case came under observation among the autopsies which I frequently perform at the request of physicians for the sake of increasing my material for laboratory instruction. In the present instance a huge abdominal tumor rendered the preparations for burial difficult, and its removal was necessary for convenience and appearance sake.

I am indebted to Dr. A. L. Benedict, of Buffalo, a post-graduate of the University, for assisting me in the study of the case and for eliciting the following brief history:

Mrs. R., white, æt. 50 years, had children; enjoyed good health up to ten years ago. Eight years ago she was said to have been treated by Dr. Pepper for gastric ulcer, and she recovered entirely, although the symptoms at first made the prognosis exceedingly grave.

In January, 1889, she consulted Dr. Goodell about an abdominal tumor which had been noticed a year before. A diagnosis of multiple fibromata of the uterus, with ovarian cyst, was made, and operation was advised, but refused. The patient was said to have had some chronic peritonitis with occasional subacute exacerbations during the last year. For the last two or three weeks there had been a hectic (?) fever.

A week before death, a trocar was introduced into the cyst through the abdominal walls, and a large quantity of chocolate-colored fluid evacuated, but it was too viscid to flow readily. During twenty-four hours before death, the patient vomited more than two quarts of fluid identical with that aspirated from the cyst, and she passed by the bowel, in several large stools, a quantity of evidently similar, dark, tarry, viscid

matter. The diagnosis was, therefore, that the cyst had discharged spontaneously into some portion of the alimentary tract, although there was no sudden pain nor other symptom which could be construed as the signal of the rupture.

There was no history of hepatic colic, but the patient had frequently complained, especially just after meals, of discomfort in the region of the gall-bladder. No history of obstruction of the bowels was obtained.

*Autopsy* (April 17, 1889), *twenty-four hours after death.*—Rigor mortis very marked. Body quite emaciated, skin sallow; abdomen enormously distended and dull on percussion; circumference at the waist nearly 100 inches. Undertaker states that he had already tapped the abdomen of about two gallons of fluid, but more would not flow.

On opening the abdomen an enormous ovarian cyst, apparently unilocular in character, and with a wall that varied much in thickness in different parts, was exposed. The omentum was firmly adherent to the wall of the cyst beneath, but not to the parietal peritoneum. A little below the umbilicus the cyst wall became externally thin, and it was closely attached to the peritoneum in front for a space of six or seven inches in diameter. Laterally and posteriorly, the cyst wall was much thicker, varying from a quarter of an inch to three or four inches in thickness. In the right lumbar region, the tumor was adherent to about a foot of the small intestine and mesentery; below this, to the head of the colon, and posteriorly to the sigmoid flexure, which was pulled two or three inches to the right of the median line.

Owing to its partially collapsed condition, it was not possible to define exactly the position of the tumor, but it seemed to extend higher on the left side than on the right, its upper portion reaching well into the left hypochondriac region and descending obliquely through the epigastric into the right lumbar region. Inferiorly it filled nearly the whole of the upper portion of the pelvis. It was firmly adherent to the uterus, which was pulled somewhat upward and to the left, and which appeared at first to be simply a hard mass in the cyst wall. The tumor was also adherent to the bladder in front, and by numerous fragile bands to the parietal pelvic peritoneum. Studded over the interior of the cyst were numerous papillomatous vegetations and granulations of a red color, giving the impression that there had been recent hemorrhage from them.

The fluid with which the cyst was filled was chocolate-colored, viscid, and nearly odorless. It seemed to be a mixture of blood with the colloid matter often found in ovarian cysts. No measures were at hand, but the

total quantity of fluid, inclusive of what the undertaker had removed previously, surely exceeded four gallons.

Microscopic examination of the fluid showed it to contain chiefly pus and red blood-corpuscles, numerous compound granule cells and the so-called ovarian cells of Drysdale; also some cholesterine plates.

The mesenteric glands were slightly enlarged, but were neither indurated nor suppurating. The uterus contained numerous small subperitoneal fibroids, and three small intra-mural fibroids, two immediately above, the other immediately below the os internum. The cavity was filled with a spherical submucous tumor about an inch in diameter, which was thoroughly calcified. Only one ovary (the left) was intact.

The small intestines were nearly empty, but they contained a small quantity of grumous matter identical with that obtained from the cyst. The stomach was filled with a coagulum of the same material. In the large bowel there was a moderate amount of tarry blood. From the lumen of the sigmoid flexure (the colon at this point being strongly adherent to the cyst), the finger was introduced into the cyst through an opening just large enough to admit the finger-tip, but whose margins tore easily. After careful search no communication could be found between the cyst and the small intestine. The spleen, pancreas, and kidneys were anæmic, otherwise normal in shape and size. The capsules of the kidneys were adherent in a few spots. The liver was markedly bell-shaped, slightly cirrhotic, and there was a small cyst on the upper surface of the right lobe. The gall-bladder was moderately distended with bile which gentle pressure did not evacuate, and through the sac a number of gall-stones occupying the dilated cavity were felt. The gall-stones were of a lustrous greenish-black color—the same as the bile in the gall-bladder—but on drying, this color was seen to be due to a thin scale of inspissated bile which chipped off in places, leaving the gall-stones of a yellowish-brown color. On section, one of the stones presented a second thin black layer, within which was a brownish crystalline stratum about one millimetre thick, and in the centre, a core of the same black color as that of the outermost lamina, and also one millimetre in diameter. The stones varied from the size of a hazel-nut to that of a pin-head. There were about twenty of the larger ones, and from 150 to 200 of the smaller ones. Unfortunately permission to examine the thoracic cavity was not obtained.

The interesting feature of this case is the possibility of the contents of the ovarian cyst having entered into the composition of the matter vomited by the patient. Examination of the contents of the stomach and of the small and large intestines made this very probable, because

the microscope revealed, besides blood and digested particles of food, elements identical with those found in the ovarian fluid. If such was the case, then the contents of the large intestines (with the latter alone was any communication established from the ovarian cyst) must have passed through the ileo-cæcal valve upward into the small intestine and stomach. Yet this is generally considered impossible under ordinary circumstances.

As to the immediate cause of death, the conditions described would seem to indicate that the patient bled to death, either from the internal surface of the cyst wall or from the intestines at the point of perforation into the cyst. The exhaustion from vomiting may also have contributed to the fatal termination. *June* 13, 1889.

---

23. *Pedunculated fibroma of the labium majus.*

Exhibited by Dr. J. K. Young.

I wish to simply exhibit this large fibroma removed from the labium majus. These are rare. Schröder has reported one as large as a child's head, and Dr. Hill has reported one weighing three and a half pounds. These tumors must be distinguished from elephantiasis and lipomata. They must be distinguished from displaced ovaries. One case is reported where a tumor of the labium was removed and found to be an ovary. The patient died. This tumor had been present six years, and this is one of the differentiating points between fibroma and lipoma, the latter being of rapid growth. This tumor on section seems rather to be of the form of myxo-fibroma. *February* 27, 1890.

---

24. *Extra-uterine pregnancy.*

Exhibited by Dr. H. F. Formad.

I have here a specimen which I removed an hour ago. It is a cyst connected with the uterus and I shall examine it here. The uterus is enlarged and suggests the possibility of pregnancy. In the cyst there are peculiar fluctuating masses looking like blood-clots, but there is no

sign of a fœtus. In the uterus there are distinct signs of a decidua. This is probably a case of extra-uterine pregnancy. Death was due to opium taken with suicidal intent. *March* 13, 1890.

---

25. *Specimens from a case of puerperal septicæmia simulating typhoid fever.*

Exhibited by Dr. Clara Marshall.

Abdominal surgery, with its increasingly wide range of applications, has, within late years, introduced new problems into the treatment of the puerperal state, of which the following case is an illustration:

M. F., æt. 20 years, white, domestic, was admitted to the gynecological wards of the Philadelphia Hospital, June 10, 1890. I am indebted to Dr. Louise G. Rabinovitch, under whose care the patient was delivered, and to Dr. Rothrock, resident physician, for notes of the case.

The patient had a good family history; parents both alive and well, and no history of any family disease. She had had the ordinary diseases incident to childhood, also scarlatina at 13 years of age, from which she made a good recovery and remained in good health.

The patient was delivered by Dr. L. G. Rabinovitch at the Maternity Hospital, January 11, 1890. The fœtus was macerated and was presumed to have been dead *in utero* for about a week. The uterus was washed out with a 2 per cent. solution of creolin, as is the practice at the Maternity in all cases of this kind. About the third day after delivery the lochia began to be offensive, but without any special rise of temperature. Douches of creolin, 2 per cent., were given until the odor disappeared. The patient was getting along nicely after the first few days of her lying-in, when she was rather uncomfortable on account, it was presumed, of the abundance of milk in her breasts, notwithstanding the attempt made to dry up the secretion. The milk soon disappeared, and she felt well, though she was exceedingly nervous because her parents did not know anything about her condition. For the first few days the uterus was soft and flabby, the os open and lips thin, though involution was thought to be proceeding fairly well. On the eleventh day of her lying-in she had an attack of facial erysipelas, from which she recovered sufficiently to leave the hospital. The temperature rose during the attack to 104.4° F.

The patient stated that since leaving the hospital she never felt entirely well, but was compelled to spend the greater part of her time in bed. During this time her condition seems to have been variable—better at times for a few days, succeeded by a relapse into her former condition. For three weeks previous to admission to the hospital she suffered from pain in the lower part of her abdomen. On March 30th, three days before admission, she was seized with violent headache, while the abdominal pain grew worse; she experienced no chill, but felt "feverish." Her condition must have remained much the same until her admission, April 2d, at 3 P.M. She then had a temperature of 101°; pulse 136, and weak. She was restless; complained of pain in the lower part of the abdomen; and over the whole of the same region there was marked tenderness on pressure. At 10 P.M. the temperature reached 104°, and at 6 A.M. the following day it reached the same point.

*April* 3. Very restless and still complained of pain. Examination of urine revealed the presence of albumin and casts (granular and hyaline). During the day she vomited greenish matter, resembling grass. The stools, two in number, were watery, yellowish and contained some mucus. During the night she was slightly delirious; pulse 150 to 160, weak, irregular; respirations regular.

*4th.* Weaker, very restless; suffered from pain, which was so intense as to cause her to cry out occasionally; easily aroused and seemed rational. The treatment up to this time consisted mainly in the administration of liquid food, quinine, whiskey and digitalis, and in the external use of turpentine in the form of stupes.

With the history of a macerated fœtus, foul lochia, and erysipelas; with removal to unfavorable surroundings while not feeling entirely strong; with failure of return to usual health; with the subsequent development of acute abdominal symptoms; with such a clinical history as this, the question of surgical interference arose. After consultation with my colleague, Dr. Edward P. Davis, it was decided to make an exploratory incision; this was done April 3d at 4 P.M. Upon reaching the peritoneal cavity a digital exploration of the pelvis and lower abdomen did not reveal the necessity for further surgical interference. A portion of the intestine was drawn out of the abdomen with a view to ascertaining if adhesions were present; none were found, although that portion of the intestine which was seen was deeply congested, giving the appearance of inflammatory action. The abdomen was flushed with hot distilled water and closed with interrupted silk sutures, without drainage. The patient was very weak during the opera-

tion and was supported by hypodermic injections of ether, whiskey, atropine, nitro-glycerin, and heat to epigastrium.

The pulse, after the operation, was 136 and weak, but soon grew stronger, and the patient's condition was apparently no worse than before the operation. At 8 P.M. the pulse began to fail; circulation more feeble; extremities cold and clammy; temperature 104°. At 9 P.M. temperature 105°; pulse weak and rapid, and could not be counted at the wrist; respirations 56; very restless and growing rapidly weaker. At 11 P.M. temperature 106°; respirations 60. Patient died at 11.50 P.M.

*Autopsy.—Thorax:* No pleural adhesions; the posterior portion of the lungs was the seat of hypostatic congestion.

*Heart:* Normal in size, pale; muscle soft and flabby; no valvular lesions; no heart clots; blood dark, liquid. Heart muscle showed evidence of acute fatty degeneration.

*Abdomen:* The peritoneal cavity contained a small quantity of dark-red fluid; some extravasation of blood into the subperitoneal fat of abdominal wall just below the lower edge of the wound. That portion of the intestine occupying the pelvic cavity was deeply congested, the remainder light-pink in color and distended with gas. Pelvic peritoneum covered with small flakes of lymph, as was that portion of the intestine occupying it. Mesenteric glands enlarged, especially about the lower portion of the ileum, where they were congested (dark-red in color), and some of them had attained the size of filberts; on section they were soft, dark-red, some of them showing a tendency to break down.

*Spleen:* Much enlarged (weight, thirteen ounces), soft, friable, dark red, pulpy.

*Kidneys:* Slightly enlarged, capsules stripped easily; on section cortex rather pale and streaked; medullary portion also pale.

*Liver:* Rather soft in consistence; otherwise presented nothing unusual.

*Uterus:* Retroverted, moderately soft. Section revealed the presence of a small gangrenous spot upon the fundus.

*Ovaries:* Ovaries and tubes freely movable; ovaries perhaps slightly enlarged.

*Stomach:* Anæmic; slightly dilated; no lesions.

*Small intestine:* Examined throughout its extent; about four feet above ileo-cæcal valve Peyer's patches were noticed to be slightly infiltrated; as the cæcum was approached the infiltration became more marked. About two feet above the valve was found a patch much more infiltrated than the rest, the surrounding intestine deeply congested, and the peritoneal surface of the intestine opposite well covered with lymph;

as the valve was approached the whole intestine was infiltrated and ulcerated, giving an appearance somewhat resembling chronic enteritis; ileo-cæcal valve involved in like manner.

*Cæcum:* The solitary glands of the cæcum and upper part of the colon for about one foot from the valve were indurated and ulcerated.

*Brain and cord:* Not examined.

The organs and tissues throughout the body generally showed evidence of acute fatty degeneration.

Dr. H. F. Formad: The question in this case is as to the cause of death. It appears to me that this was a case of typhoid fever.

Dr. James Tyson: I think that there is every reason to believe that this was a case of typhoid fever. There is distinct ulceration of Peyer's patches. Although the ulceration is not deep, still there is unquestionable lesion of typhoid fever.

Dr. S. Solis-Cohen: That is the particular question which it is desired to have discussed, whether or not this was a case of typhoid fever. It has been stated that such ulcerations might be due to septicæmia, but although they may exist I have never seen such ulcerations arising from that origin.

Dr. James Tyson: There is no reason why septicæmia should necessarily produce ulceration. Of course, there are intestinal troubles of a follicular nature which may simulate typhoid fever, but in these the lesions are much more uniformly distributed. In follicular enteritis, where the follicles are enlarged and ulcerated, the picture is uniform. Here the follicular changes, although distinct, are by no means such a prominent feature. The ulcerated Peyer's patches, the enlarged spleen, and the enlarged lymph-glands are of such a peculiar type as to be characteristic to my mind of typhoid fever.

Dr. Clara Marshall: The operation was undertaken in this case after consultation with my colleague, Dr. Davis. At the time the operation was done we had no complete history of the case, and the patient had been under observation only a day and a half. I understand that Dr. Laplace saw the specimens and was in doubt as to the case being one of typhoid fever. This is the principal reason why the specimens have been presented.

Dr. Ernest Laplace: I was asked to view these specimens and give my opinion, based on what I saw without having the history of the case. The suspicions were first toward typhoid fever. I have seen specimens from many patients dying from typhoid fever, but these specimens do not look like them. In those cases the different stages of the disease process are to be found, from the primary congestion to superficial

ulceration, the deeper ulceration, the still deeper ulceration, and finally perforation. I fail to see anything of that kind in this specimen. I do not find any excavating ulceration, but rather a proliferation of the cells of the mucous membrane. My attention was directed to the uterus and the possibility of infection. I found there a spot which at that time was more marked than it now is—a greenish ulcerated spot in the uterus. This looked like the primary seat of an infection, developing a case of septicæmia which had exerted a selective action upon the solitary glands and Peyer's patches of the intestine. We have different kinds of septicæmia, and of these typhoid fever is the most common. There are some poisons which cause elevation of temperature, spasms and death. There are others which act upon the spleen and the solitary glands of the intestines. These cases are to be studied and not classed as typhoid fever simply because we do not exactly know what they are.

Dr. G. G. Davis: If this case died from septicæmia, we should find more evidences of it somewhere. If the pain and other symptoms were due to septic trouble we should expect to find some condition in the uterus showing its origin, not only in the lining membrane, but some general condition affecting the venous sinuses. In other words, there should be evidence showing the distinct propagation of the disease by continuity of structure. We should hardly expect death from septicæmia coming in a roundabout way from a single localized spot without any implication of the covering or tissues of the uterus and pelvic organs. The only distinct evidences of disease were found in the small intestine. Another point which would be against the supposition of pure septicæmia is the presence of diarrhœa, which I understand resembled that of typhoid fever. I should be disinclined to attribute the death to septicæmia unless there were more evidences of the local septic condition in some part of the body.

Dr. Laplace: I would call attention to the fact that it is not necessary that the seat of infection should bear great traces. We see that in other affections. In tetanus, for example, we may have the disease fully developed without a trace of the seat of infection. A patient may have septicæmia from some womb trouble, but the womb need not necessarily show marked signs of having been the source of infection. The poison needs only to find access to the blood, where it then develops and causes death. In this womb there is something which to my mind requires reflection. I do not think that with the symptoms we are warranted in accepting this as a case of typhoid fever when we have such a spot as we have here. This spot is thoroughly gangrenous. I am not pre-

pared to deny the diagnosis of typhoid fever. I am simply trying to find out the truth. We do not know that there are not forms of germs other than the typhoid fever bacillus which will produce ulceration of the intestinal glands. I say that it is not impossible that there is some germ which, like that of typhoid, exerts a selective action upon the solitary glands and Peyer's patches—an action resembling that of typhoid fever. To my mind these ulcerations are not exactly those of typhoid fever. The fact that the patient died at an early stage may account for some of the variations, but I do not think that we are warranted in accepting a case such as this as a case of typhoid fever until the bacillus is found.

*April* 24, 1890.

---

26. *Intra-uterine fibroid polyp.*

Exhibited by Dr. W. M. L. Coplin.

I have here a fibroid of the uterus which fills the entire uterine cavity and is attached by a small pedicle. The specimen is from the dissecting-room. There was no adhesion of the uterus. I do not remember seeing a fibro-myoma of the uterus with so small an attachment. In the interior the tumor is in places almost cystic.

Dr. Formad: Dr. Lambert, of Reading, sent me a tumor of a somewhat similar nature two years ago, which he stated had been delivered by labor pains. The woman was believed to be pregnant. She went into labor and the fibroid was safely delivered. It is quite common for these tumors to be pediculated and the pedicle slough off for some reason.

*March* 27, 1890.

---

27. *Large ovarian tumor of rare form simulating pregnancy.*

Exhibited by Dr. E. P. Davis.

The patient from whom this tumor was removed post-mortem was a young woman, æt. 22 or 23 years, who came into the Philadelphia Hospital with the firm conviction that she was pregnant and that the child was dead. The history was that she had been deceived. After this she failed in health, the menses ceased and the abdomen increased in size. She visited a mission, where the attending physician pronounced her pregnant with a dead fœtus. At this time she began to manifest sym-

toms of tubercular disease of the right lung. Meanwhile the abdomen assumed the contour of pregnancy about the fourth to the sixth month. From the mission she went to a maternity hospital, and although no examination was made, no suspicion that the woman was not pregnant arose. She was turned away for lack of room. She then came to the Philadelphia Hospital. The contour of the abdomen was characteristic. Palpation revealed a semi-elastic tumor. Auscultation failed to develop the fœtal heart-sounds, nor could the movements of the fœtus be elicited. The breasts were not enlarged. The physical signs obtained on examination of the chest were those of tubercular disease at the right apex. We found that she had a contracted pelvis, the conjugate diameter not measuring more than seven centimetres. It was, therefore, decided to introduce a bougie into the uterus; but when we came to do this, we found that the uterus was not enlarged. The cervix was virginal in appearance and feel. The fact that the woman was not pregnant with a uterine gestation was almost certain; whether or not it was extra-uterine with a dead fœtus was a question. At that time the condition of the patient was such as not to warrant the use of an anæsthetic. It was decided to do nothing, but we arranged that when the woman died the abdomen should be opened instantly. If the woman were pregnant and a living fœtus were present it would give a chance of removing it. When the woman died the abdomen was at once opened by the resident physician and this ovarian tumor found. During the last week before death there was an accumulation of fluid in the peritoneal cavity.

At the post-mortem, the body was that of an emaciated young woman. The pleural cavities contained a large quantity of yellow serum. Left lung compressed by the presence of the effusion. The right lung presented the clinical picture of tuberculosis in all stages. The liver was somewhat fibroid in character. One of the kidneys was dilated, the ureter admitting the little finger. The tumor proved to be a myxosarcoma of the left ovary arising from a pedicle six or eight inches in width, and containing a pint of reddish fluid. About two inches above the promontory of the sacrum there was a metastatic growth. The mesentery was dark-red, and in it there was multiple metastasis. The intestines were somewhat injected. The point of interest in the case was the development of the symmetrical enlargement of the abdomen simulating pregnancy.

It is probable that no operation could have been done in this case with any chance of success during the last five or six months. An

interesting point is the presence of the enormous amount of fluid in the thoracic cavity.

Dr. H. F. Formad: It is rare to have sarcoma of the ovary. This is not a cystic tumor; it is one of the gelatinous growths. I do not think that the mass found at the spine was metastatic. It was probably simply a mass of hypertrophied glands or else a simultaneous growth. These tumors of the ovaries are not known to give metastasis. The combination of ascites is also interesting.

Dr. J. H. Musser: I wish only to refer to the hydrothorax which was found in this case on the left side, the lung of that side not being the seat of disease. Dr. Davis tells me that a physical examination had not been made prior to one week before death. We are not certain, then, as to the duration of the hydrothorax. It is not uncommon to find on the post-mortem table the chest more or less filled with fluid which had not been noted during life. This occurs especially in asthenia and probably takes place during the last forty-eight hours of life. I have seen it occur as the result of sudden determination of blood to that part as the result of exhaustion, change in temperature, or some depressing influence upon the circulation. In a case of sarcoma of the peritoneum with some ascites, the patient did perfectly well until he suddenly had dyspnœa followed by death; the occurrence of these symptoms of hydrothorax being coincident with the cutting off of the steam and the lowering of the temperature in the ward for twenty-four hours. In a condition of asthenia anything that will change the balance of the economy will tend to the exudation of fluid in any part of the body, but particularly in the pericardial and pleural sacs.

Dr. H. F. Formad: It is clear that in many of these cases the effusion must occur shortly before death. In many cases where we find these effusions the patient will have been attending to his work the day before.

Dr. J. P. Crozier Griffith: I have only a word to say in connection with these cases of rapid effusion of liquid. I should be inclined to think when I found ascites and œdema of the lower extremities in an asthenic individual, that effusion was also taking place into the pleural and peritoneal cavities. I do not know why we should assume that it begins shortly before death. The cause is similar to that which often produces albuminuria in these cases. This is explained by the fact that the circulation is so poor and blood-current so sluggish that leakage of albumin is permitted. There must be altered tonicity of the vessels in these cases, and great slowness of the current has something to do with it. In these cases the effusion may often be due to tubercular pleuritis which is not discovered. This will even produce hemorrhagic effusion,

and often it causes simple serous effusion. It may easily happen that this may occur long before death. I have now under observation in St. Agnes Hospital a man who has in the upper part of one lung a huge cavity and in the lower portion of the chest of that side there is a distinct pleural effusion which I consider due to tubercular pleurisy which has caused no symptoms. This man has already been sick six years and may live much longer.

Dr. E. P. Davis: There were no evidences of pleural inflammation to account for the effusion. A point that I omitted in my remarks was in regard to the microscopical examination of this supposed metastatic growth. It contained a multitude of round cells rather uniform in size and containing one or more nuclei, clearly sarcomatous in nature.

*June* 12, 1890.

---

28. *Fibroid of the uterus; ovarian cyst; hydro-salpinx.*

Exhibited by Dr. J. Price.

I have here a fresh specimen which is interesting, although not rare, from a surgical or pathological point of view. It illustrates the mixed condition of affairs which we find in the pelvis. We have an ovarian cyst on one side; on the other we have a hydro-salpinx. In addition there is a fibroid uterus with intra-uterine cancer. From this woman, some four months ago, I removed a large fibroid polypus, the size of a California pear. I examined the cavity of the uterus and found it perfectly smooth. One month later I removed another large fibroid polypus. Six weeks later a third, and a week ago a fourth. The last was decidedly suspicious, and it was not until then that I suspected malignancy. A week or ten days ago I cleaned out the cavity of the uterus, and you can see how rapidly it has refilled.

There is a general impression that malignant disease of the uterus is commonly cervical. That has not been my experience. I have found it intra-uterine many times. I have treated two patients in whom fæces were discharged through a metro-rectal fistula for some three months. It is common for cervical cancers to give rise to cicatricial patches in the bowel as low down as the sphincter.

In the case reported to-night the omentum formed a hood covering the pelvis. After separating this I found the small bowel adherent to the hydro-salpinx, and the large bowel adherent to the ovarian cyst.

After making a supra-vaginal hysterectomy I found that the cervix was also involved and removed it. The operation was done this morning, and so far the patient is doing well. *September* 25, 1890.

---

29. *Epithelioma of uterus.*

Exhibited by Dr. J. K. Mitchell for Dr. B. Reed.

Married woman, æt. 43 years, resident in St. Louis. Seven years ago a sarcoma was removed from her jaw. A year later having returned, it was removed by another and more thorough operation, and has since given her no further trouble. About four years ago she became pregnant, and shortly afterward a small fibroid tumor was discovered in the uterus. This continued to grow during the entire period of pregnancy, and its existence was confirmed by several distinguished gynecologists. It is said to have been in the fundus; but the patient could plainly feel it herself, and it was probably interstitial. Six weeks after being delivered of a full-term child, patient was examined by a very competent obstetrician, who found no trace of the tumor remaining.

For about a month past patient has been having until within a few days a moderate flow of blood, with occasionally mild sacral pain. October 14th I examined her and found a small laceration of the cervix, and the uterine canal three and one-half inches long. No tumor could be made out. Blood was still coming, and I curetted with the Thomas dull curette, bringing away the specimens submitted together with a quantity of a pulpy substance not containing any distinct vegetations. The uterus was then swabbed out with iodine and carbolic acid, and an aseptic tampon inserted in the vagina. The hemorrhage ceased for a day, then recurred, and yielded finally two days later to large doses of ergotin and gallic acid. At this date—October 22d—there has been no further recurrence and patient is looking well. She is of a very nervous temperament, but not cachectic.

This specimen having been referred to the Committee on Morbid Growths, at the following meeting it was reported to be of epitheliomatous character. *December* 11, 1890.

30. *Subperitoneal fibroid tumors of uterus.*

Exhibited by Dr. J. Price.

In presenting before the Society two subperitoneal fibroid tumors of the uterus, one with smooth, shining surface, the other rough and showing numerous marks of the knife over the surface, and evidences of marked adhesions, each tumor being about the size of the adult head, he remarked:

"The specimen I here present is a fibroid tumor of the uterus without any adhesions, removed on Monday last from the person of a colored woman, æt. 47 years, who had been treated for the tumor for seventeen years by a careful and wise physician, who abstained from the use of electricity in attempting its removal. Curiously, in the last two years I do not recall removing a tumor so free from the adhesions which are encountered on all sides to-day, because of the use of electricity.

"On the other hand," presenting the second of these tumors, "I have to show a tumor which was bound down by many adhesions, the result of some eleven séances of electricity, and about six or eight consequent severe attacks of peritonitis. After the application of the electricity the tumor grew rapidly and caused the lady to be confined to her room. On opening the abdomen the tumor was found to fill up the pelvic space, and extended from the coccyx to the umbilicus. The tumor was adherent almost over its entire surface, and the knife had to be used freely in its removal—to the misfortune of the patient, in that the left ureter happened to be incised accidentally, with the result of establishing a urinary fistula.

"What I am able to point out in relation to these two tumors seems to be becoming more and more evident every day. The application of electricity for the purpose of inducing the absorption of these fibroid tumors seems, instead of accomplishing this purpose, to be complicating our cases and increasing our mortality by causing the adhesions now so common, by increasing the rapidity of growth and by prolonging the time of the operation." Dr. Beates, in discussion of the specimens, spoke with emphasis of the utter lack of value of electricity in the removal of pelvic growths, and the tendency to start up adhesive inflammations.

Besides the above specimens, Dr. Price exhibited as card specimens an ovarian cyst, which he had recently successfully removed; an appendix vermiformis, removed from a case of purulent peritonitis from

appendicitis; and the parotid gland of a young woman, æt. 23 years, removed for the presence of some tumor formation in the organ (in which operation it had been necessary to ligate the external carotid artery). This tumor of the parotid gland which was referred to the Committee on Morbid Growths was subsequently reported as a mixed tumor of the parotid, the bulk of a lipomatous and myxomatous nature, with some sarcomatous and fibromatous change, and with but little epitheliomatous tissue in the mass. *January* 8, 1891.

---

31. *Ectopic pregnancies.*

Exhibited by Dr. J. Price.

Dr. Price exhibited a series of ectopic pregnancies—five cases. Two of these cases had been operated upon by Dr. Price in a single day in this city, illustrating the frequency of the occurrence. The one had formed in the fimbriated extremity of the tube, the rupture of the tube occurring in the pavilion extremity. The woman in this case had severe hemorrhage, but the condition was recognized at once and the operation performed. At the operation the abdominal cavity was found full of blood, the pulse was 130 per minute, and the patient blanched; she has, however, recovered nicely.

In the second case there had occurred a rupture of the tube, hemorrhage, and almost complete absorption of the blood; upon the same side there was an ovarian cyst of small dimensions.

A third case was an unruptured tubal pregnancy, removed from the person of a lady from Harrisburg. The condition was recognized by her physician, and in consultation, his diagnosis being confirmed, immediate section was counselled and done, with happy result.

Another case is presented from the practice of Dr. Maury, of Nashville, in which the seat of the pregnancy is apparently in the ovary. In an examination of the wall of this case of Dr. Maury's by Dr. Allen J. Smith, the suspicion of ovarian pregnancy was confirmed, the existence of distinct ovarian tissue being determined by the microscope. In a last case, an intelligent lady from Pottsville, there was noticed, as in many of these cases, an exaggeration of the peculiarities of pregnancy amounting sometimes to actual mental disorder.

Dr. Price took occasion to comment upon the greater frequency of diagnosis of the condition at present than formerly, accounting for the

increased number of operations. In any woman in whom there is a suspicion of pregnancy, usually of six or eight weeks' duration, with some irregularity of symptoms, in whom there occurs a sudden pain in the lower portion of the abdomen followed by symptoms of collapse, there is strong evidence of the presence of ectopic pregnancy, and operative procedures are to be considered immediately. The pain in these cases arises from the rupture and hemorrhage. There is a general opinion that these women die from shock, but it is rather from loss of blood, and in the event of the occurrence of these symptoms there is usually time enough to summon a surgeon and perform the operation with hope of successful outcome.

In answer to a question from the speaker Dr. Formad stated that in his collection of thirty-two cases of ectopic pregnancies there were but two which had occurred in the end of the tube toward the womb, the rest all having taken place in the pavilion extremity.

*January* 8, 1891.

---

### 32. *Pyo-salpinx; hæmato-salpinx.*

Exhibited by Dr. J. Price.

Dr. Price presented a large pyo-salpinx, the pus being contained in the tube in pockets; together with this pus tube there was found in the same case and on the same side a small suppurating cystoma, which was removed with the rest of the specimen and presented before the Society. The ovary was in fairly normal condition, but adherent. These specimens were removed from the left side, and serve to illustrate the mixed condition of affairs usually encountered in pelvic suppuration.

A second specimen, interesting from the fact of having been removed from one of a class of patients in whom error of diagnosis is dangerous, was removed from a woman who had been treated for five weeks for typhoid fever. At the end of that time, when Dr. Price was asked to see her, there was evidence of a marked and angry peritonitis. Upon opening the abdomen a fibroid tumor was found, and passing over this tumor there was a tube, enlarged, somewhat tortuous, and suggesting suppurative changes. This tube, as presented before the Society, was about four inches in length, with irregular enlargements about the size of grapes toward the pavilion extremity of the tube; and upon opening it before the Society, it was found to contain a dark, blood-like

fluid. Coe and others state that a tube may be quite filled up with retained substance and yet the patient recover and bear children; here is a tube in just such a condition, but it can scarcely be conceived how the degree of mischief as found here could possibly recover.

In connection with this case, Dr. Price exhibited specimens from two other cases which had both been treated for supposed typhoid fever. From one case, a virgin, had been removed large ovaries and pus tubes, the operation having been performed by the removal of a large fibroid tumor of the pelvis, which by pressure upon the bladder had necessitated the use of the catheter. From the other case, a woman from Boston, there had been removed two weeks ago both tubes full of a cheesy and purulent matter and ovaries much changed. All these cases had progressed very favorably after operation, and the character of their symptoms had promptly changed. *January* 22, 1891.

---

33. *Malformation of uterus and vagina.*

Exhibited by Dr. J. L. Hatch.

I present in the specimen before the Society a congenital malformation of the uterus and vagina. In performing the post-mortem examination of the body of a woman before the class of the University of Pennsylvania, I found the intestines adherent, from an old peritonitis, to the pelvic viscera; and this led me to examine more carefully the genitalia. There was a retention cyst of the right ovary, and on removal of the uterus it was found to be provided with two, instead of with a single os, and there were two separate orifices for the vagina; the uterus was also somewhat bicornuate. The anomaly seen in this specimen is not a very common one, and when two ora do occur to a uterus there is usually present a divided vagina.

In answer to a question from Dr. Hatch as to the frequency of the occurrence of the anomaly in his experience, the President, Dr. Formad, answered that he had met it only once in several thousand post-mortem examinations of adult women, and that the specimen referred to was not so clear as the one presented by Dr. Hatch.

Dr. Price stated that double vaginæ are not at all uncommon and that they are usually met in conjunction with double-mouthed uteri.

*January* 22, 1891.

### 34. *Various gynecological specimens.*

Exhibited by Dr. J. Price.

Dr. Price presented a series of specimens obtained by him from his gynecological practice, as follows:

There was first a mass of clots taken from a ruptured tubal pregnancy on the left side. The patient had been complaining of pain and presenting evidences of concealed hemorrhage for two weeks prior to the operation. At the time of the operation the pulse was running at from 150 to 160 per minute; on the table it fell to 120. The case was picked out by a recent graduate, and illustrates the comparative ease with which those cases should be recognized. Dr. Price believed that the increased study of this condition is leading to a very much better state of knowledge among general practitioners, and did not hesitate to state his feeling that the fatality of the trouble will in consequence be in the future much lowered.

Following the above, the exhibitor presented to the Society a series of three pus tubes removed successfully by him from as many women.

A uterus at the fundus of which were two small fibroid tumors, showing at points invasion of malignant disease with which the rest of the organ was wholly involved.

A number of blood-cysts, all removed from multipara.

A huge tumor of the ovary, weighing 46 pounds. This was removed from a woman, together with several pails of dropsical fluid. It was adherent from the sternum to the pelvic basin, and had been growing for fourteen years. The patient was over sixty years of age, confined to her bed, exceedingly weak, and was passing scanty, albuminous urine at the time of the operation. The tumor was removed with the greatest difficulty, requiring dissection from all the surrounding parts; and the operation consumed considerable time. However, in three days after the section there can be noted a vast improvement in the woman's general condition; her kidneys are acting more normally, and there is every hope for her ultimate recovery. The tumor is a hard, firm, fibrous mass and seems to have started from the left ovary. The operation in this case was not performed by Dr. Joseph Price, but by his brother, Dr. Mordecai Price. *February* 12, 1891.

35. *Five cases of extra uterine pregnancy.*

Exhibited by Dr. C. P. Noble.

The first of these specimens was removed from the person of a woman three months gone in pregnancy. The tube had not ruptured, but a rupture had occurred between the fœtal mass and the tube and a hemorrhage had taken place into the fimbriated extremity of the tube. In this position it had clotted and dilated the tube and had been expelled into the belly, where it was retained as a dome-shaped mass. The lesion occurred upon the left side. This case demonstrates that a collection of blood in the pelvis which is distinctly dome-shaped and outlined above may be a hæmatocele and not a hæmatoma.

The second specimen was removed unruptured. The operation was performed without the diagnosis of extra-uterine pregnancy having been made, although the condition should have been recognized. The fœtus was of three months' development. The woman had a history of severe attacks of pelvic pain from peritonitis, and the present condition was overlooked under the supposition that there was a pyosalpinx. Under this supposition the operation was performed and the pregnancy discovered. No rupture had taken place, and the part was removed. There had been no hemorrhage into the peritoneal cavity and the woman made an excellent recovery. This occurred on the right side.

In the third case the fœtus was of between three and four months' development. The patient was seen one afternoon and gave a history of missing a period, with subsequent irregular bleeding, and lately of attacks of fainting. There was a history of gonorrhœal infection. Prior to the operation there were several attacks of fainting. On operating on the belly it was found full of blood, although the pulse had not been very rapid or suggestive of hemorrhage. This woman died, a condition of hyperpyrexia appearing immediately after the operation and persisting, to be followed by death. In this case I can scarcely think that there was any septic cause for the sudden fever and death (within twenty-four hours). I noticed a peculiar odor upon the breath of this woman, and also in other cases of hemorrhage and believe it to be due to some relation of the fibrin ferment, by which possibly some active poison may have been developed which was accountable for the fatal result. Undoubtedly this was influenced by the profound and acute anæmia.

The fourth specimen is interesting in that the case was undergoing a spontaneous cure. She had missed her sickness for two weeks and took some medicine or other in order to bring on a miscarriage; as a result, she experienced a severe attack of pelvic pain. For this she came to the Kensington Hospital for Women; the great pain and the tumor suggested the nature of the trouble, and the patient was at once admitted and put to bed. There was no recurrence of active symptoms; but on section there was found at the proximal end of the left tube a small pregnancy about the size of the distal extremity of the little finger. There had been no rupture, no hemorrhage, and the inflammatory symptoms were those which had led to the operation. The woman recovered without difficulty.

The fifth was another fatal case. The fœtus in this instance was, from the history, of about ten weeks' development. The woman was married, but had been sterile; the uterus was very small and there had been dysmenorrhœa of the ovarian type. She had been under my care prior to the pregnancy, when the left appendage was extremely tender but there was no evidence of the presence of pus. Under treatment the woman conceived in the left tube. Six weeks afterward she was seen, and again two weeks later. The uterus was then somewhat enlarged but not enough for a two months' pregnancy; back of the uterus a tender appendage suggested the presence of an extra-uterine pregnancy, but no operation was done at that time. At the end of the ten weeks I was notified and found the woman suffering intensely from pain, but an operation was refused. The following day rupture took place, and a section was immediately done. The belly was found full of blood. The effect of the great hemorrhage was probably the cause of death in the case. The woman lived, however, some days after the operation.

In addition to the above cases I have seen and aided in five more within the past two years. The first of these was the case of Dr. Wilson. Free hemorrhage had taken place into the peritoneal cavity, but the case was recognized at once and the operation done almost immediately, and recovery followed. The pregnancy was one of two or three months' duration, and was upon the right side. The second of this series was one seen in the practice of Dr. Leaman; it was one marked by slow hemorrhage, irregular menstruation, colicky pains, collapse, and fecal vomiting. Operation followed the appearance of the last-named symptom; a large hæmatocele was found, containing perhaps a quart of blood from the right tube. The fœtus was about two or three months old. Recovery followed operation. The third case was seen

with Dr. Longaker; it was of three or four months' existence. The sac was not found ruptured, but a vein had broken and the belly was partially filled with blood. The operation was followed by recovery. The next was in a woman with a suspicious history; she had had typhoid fever in the summer, and at that time her menses had been arrested. After recovery her periods were irregular, and she complained of pains in the left groin and irregularity of discharge. A mass was found to the left of the uterus, which was painful to the touch. Laparotomy was performed, and on the left side an ovarian cyst was removed together with the tube, which contained a mass of clotted blood. As a rule hæmato-salpinx is a bilateral disease, and when this condition is met on only one side it is taken as evidence of the existence of extra-uterine pregnancy. This specimen was examined by Dr. Piersol, and no chorionic villi were found. Some observers claim that the recent literature of extra-uterine pregnancy is worthless, inasmuch as there have been a great many cases described as extra-uterine pregnancies which in reality were cases of hæmato-salpinx. It is said by these persons, and their position seems entirely tenable, that no case should be called a pregnancy save where the fœtus may be seen or there are evidences of the pregnancy in the presence of chorionic tissue.

In every case of tubal pregnancy seen by me, bilateral salpingitis has been present.

Dr. Formad remarked the interesting character of the communication of Dr. Noble, and said that the prevailing opinion in regard to these hæmatoceles of the tube is that they are the result of extra-uterine pregnancies. It is so believed by Dr. Goodell; in one-third of the cases which he has seen no fœtus was found, but examination of the sac makes him believe that the lesion was the result of pregnancy.

Dr. Meigs: Is it not true that Dr. Noble takes the ground that not all the cases so described are extra-uterine pregnancies? What is the position occupied by Dr. Piersol?

Dr. Noble: The presence of chorionic villi in a case would make me regard it as a pregnancy, and the absence cause its refusal.

Dr. Meigs: Several years ago I examined the oviduct of a mouse which contained four products of conception. One was a well-developed fœtus; another was undoubtedly a fœtus, although not so well developed. The others were so difficult of recognition, however, that it was only by serial section that their real character could be made out. I should think that in the case of the human subject the same procedure would sometimes be necessary.

Dr. Baldy asked the exhibitor whether in any or all these cases there

was any disease of the opposite appendage. Upon Dr. Noble answering that this was the case in all the instances and that all the operations were bilateral, Dr. Baldy said:

This bears upon the causation of extra-uterine pregnancies, supporting the idea that in these cases there is an inflammation and desquamation of the epithelium of the tube upon both sides with the production of obstruction. It is a fact that in almost all cases there is some evidence of salpingitis. There is no doubt but that some of these cases recover spontaneously; I have seen and operated upon several cases in which the fœtal mass was undergoing absorption, and in which the symptoms were those which might be expected from the presence of any foreign body.

As to the nature of the hæmato-salpinx, it may be said that it is almost always taken as evidence of the existence of extra-uterine pregnancy. The presence of chorionic villi is perhaps a point well taken, but there is this to be said on the other side, that perhaps those structures taken as chorionic villi are not really villi, and moreover, there may be villi present which are overlooked. I have one specimen of extra-uterine pregnancy which showed at least one beautiful instance of the latter structures as mounted by Dr. Piersol, but I have never been able to find another example from the same specimen, although I have looked several times. I never saw a case in which there was blood in the tube but that it was exactly like every case of extra-uterine pregnancy which I have witnessed—identical at least macroscopically—and unless other cause for the hemorrhage could be shown, I should be unwilling to accept it as due to anything else than extra-uterine pregnancy, which undoubtedly produces the majority of these lesions.

*February* 27, 1891.

---

36. *Enormous fibroid tumor of uterus.*

Exhibited by Dr. J. M. Baldy.

The woman from whom this specimen came was 35 years of age; the tumor was of ten years' growth. Really it was of six years' growth, for during the last four years it remained *in statu quo*. She applied to the exhibitor for operation several months ago; but, on account of the enormous size of the tumor, it was refused. She died about three nights ago, and after death this specimen was obtained. It appears to be a

pure fibroma of the uterus; it was slightly adherent to the anterior abdominal wall; the only attachment of great importance was to the uterus by a neck the thickness of a man's wrist. The mass weighs between thirty and forty pounds, and shows on section patches of cystic change. The central part is in an advanced state of degeneration, the condition which the electricians endeavor to bring about in order to promote absorption. The whole peritoneum about this mass was covered with nodules of small size, looking like small cancerous deposits or tubercles. The lungs were free from disease; the kidneys free; the liver was dotted over its surface with these small nodules, as, too, were the uterus and pelvic organs. The neck of the uterus was much elongated and hypertrophied. *March* 12, 1891.

---

37. *A case of tubal pregnancy.*

Exhibited by Dr. M. H. Fussell.

The case from which these specimens were removed came under my notice while attending the patients of my friend, Dr. Mellersh. The history is as follows:

Mrs. L., æt. 25 years, had one child 4 year sold. Since the birth of this child, four years ago, she suffered from periodical attacks of severe abdominal pain. The attacks of pain were so great at times that she would almost faint. Such attacks were most likely to occur during a movement of the bowels. I saw the patient for Dr. M. on a Monday afternoon, obtained the above history, and the additional fact that she had missed her monthly sickness for three months, it having appeared on the previous Thursday. I found her with severe abdominal pain; belly tense, swollen, and tender; pulse good; bowels constipated. Vaginal examination revealed an anteflexed uterus, with a mass posterior and to the right side, tender on pressure.

On thinking over the case I dismissed my first impression of possible extra-uterine pregnancy, and came to the conclusion, from the history of long-standing recurring pain, evident signs of peritonitis, and a mass, that it was due to some inflammatory trouble in the tube or ovary. How I erred the sequel and specimen show. The patient was given salines in small repeated doses, and the next morning she was better. The belly was still tense and painful, but evidently better. The next morning patient seemed entirely well, free from pain, anxious to eat;

belly flaccid. She appeared so well that I hesitated about making another visit, as she was not my own patient. The mass posterior to the uterus still persisted, but was much less tender to pressure. On my return to the office at 7 P.M. that evening, forty-eight hours after my first visit, a call was waiting that Mrs. L. was not so well. There seemed to be no urgency, as the call had been left two hours before, and I took dinner and arrived at the place about 9 P.M.

I found the woman with this history: She was perfectly well until 2 P.M., when on arising to have the bowels moved she was seized with excruciating abdominal pains. The pains and distress were so severe that her friends despaired of her life and sent for her clergyman instead of me. On the clergyman's arrival the woman appeared better, and he advised them there was no probable danger, but that they had better send for me, which they did, leaving the not urgent call as above. I found the woman collapsed, pulseless, blanched, and semi-conscious. I at once feared ruptured extra-uterine pregnancy, and sent off in hot haste for Dr. John Shober. He kindly responded, but reached the house after the woman's death.

At *post-mortem*, held seventeen hours after death, the following conditions were found: Body of well-formed female; no external marks; abdominal walls very fat. Incision through peritoneum allowed bloody serum to exude. On opening the belly four quarts of bloody serum, pure blood, and clots were removed; one mass, which was thought to be the ovum, floating free in the abdominal cavity. There were a few recent peritoneal adhesions between the coils of intestines. A mass was seen posterior to the uterus. This mass, together with the uterus and all appendages, was removed and examined. The mass was adherent also to the posterior pelvic wall. On examination both ovaries were found normal, but bound down with adhesions to the posterior part of the uterus. The fimbriated extremity of the right Fallopian tube apparently caps a mass the size of a hen's egg, which is covered externally with a thin semi-transparent membrane apparently containing bloodvessels. This mass is ruptured at the lower outer extremity—this rupture being the evident seat of bleeding. From the ruptured portion protrudes what are apparently blood-clots. On dissecting up the somewhat fleshy walls was seen a cyst the size of a pigeon's egg, with transparent walls containing a clear fluid and an embryo, about three-quarters of an inch long. There is no trace of deciduum in the uterus. The right ovary contains a corpus luteum.

The mass, which at the *post-mortem* was supposed to be the escaped ovum, was unfortunately spoiled largely. Its walls, however, consisted

of a transparent membrane, and it apparently contained liquid. It certainly had a cavity, but no trace of an embryo was found. In the absence of an accurate examination its precise nature cannot be stated, and unless this was a twin pregnancy it was certainly not an ovum, as the ovum is in the specimen presented.

This would have been an excellent case for operation; the mass could easily have been tied off and the woman's life saved. Even had she been seen immediately after the rupture, doubtless her life could have been saved. The mistake in diagnosis, in view of the very distinct and definite history of long-standing pains, notwithstanding the history of missed periods, was possibly pardonable; but the case is one which goes to show how dangerous delay in operating in cases of evident tumors of the appendages often proves. If I had called a surgeon at once, my friend's patient in all probability would to-day be living.

Dr. Formad called the attention of the Society to the fact that there were present here at first none of the classic symptoms of rupture of an extra-uterine pregnancy save the pain, the anæmia, and the other phenomena, and death not following until seven and a half hours afterward. From these circumstances he would infer that the fatal rupture was a secondary one; that, in other words, there was first a rupture into the broad ligament, a sort of interstitial rupture, not a complete one, some hours before death. The specimen seems to him to show a separation of the folds of the broad ligament, probably the result of the first rupture, and from which a secondary rupture took place into the peritoneal cavity, with death from hemorrhage.

Dr. Packard recalled several cases of extra-uterine pregnancy he had met in which the symptom of abdominal pain had been complained of for some time before death, particularly one case seen in the Fifth Street Dispensary by the kindness of Dr. Price, complaint having been made of abdominal pain for at least a month before the rupture.

Dr. Fussell here stated that the woman from whose body the specimens were removed had gone, two days before consulting him, to her physician complaining of abdominal pains.

Dr. Formad said that his cases of extra-uterine pregnancy were always fatal from the primary rupture into the peritoneal cavity, and were those in whom the first symptoms were those actively indicative of rupture. Such as present symptoms any length of time before death he never gets to see, as these do not fall within the jurisdiction of the coroner. He has come to the opinion, from the combined experiences of others and himself, that all those cases that live longer than, as an average, seven, eight, or ten hours, really have two ruptures, a primary

and a secondary. The first, not immediately fatal, goes into the folds of the peritoneum, which hold the ovaries in position; and it is succeeded at a variable interval of time by a secondary rupture from this sac into the peritoneal cavity, when a fatal result rapidly supervenes as a rule. Dr. Formad noted, too, the downward direction of the sac in this case of Dr. Fussell's, showing that it did not lead directly into the peritoneal cavity.

Dr. Miller desired to know whether there had been any history of uterine hemorrhage in this case. He had always understood that uterine hemorrhage and pain were the most common symptoms of such a condition.

Dr. Fussell answered this inquiry by stating that so far as he was aware there had been none. *May* 28, 1891.

---

### 38. *Bilateral ovarian new-growths.*

Exhibited by Dr. G. Metzler.

I do not desire to discuss this case, or the tumors, or the microscopic specimens prepared from them, but to present the history of the case, because of the very great variety, or lack of uniformity, of opinion in relation to the case as expressed by the various physicians consulted.

The lady from whom these specimens were removed is æt. 31 years; she has always been healthy. She has been married twelve years; her family history is negative. About three years ago there occurred a uterine hemorrhage, which the physician summoned stated was due to the presence of a polyp of the womb. After a time her abdomen began to enlarge, and Dr. Boyer diagnosticated pregnancy and awaited labor. Last fall there occurred another hemorrhage, when the woman consulted Dr. Paist, who said that this and subsequent hemorrhages were due to exhaustion. Under treatment by this physician there did not follow any improvement. The patient next consulted Dr. Scheetz, who diagnosticated scirrhus of the cervix, and referred the case to Dr. Goodell, who stated that there was a cancer of the cervix and a fibroid of the body of the womb. Doubting the diagnosis I obtained a portion of the growth, which was examined by several of the pathologists at the University of Pennsylvania, and proved to be an adenomatous papilloma.

This growth was removed by Dr. Goodell, but the abdomen remained enlarged. Several months after there occurred another hemorrhage, and Dr. Goodell was again called in. He did not, however, advise further operative procedure, as he believed that the fibroid of the body of the womb was taking on a malignant character. As a last resort Dr. Price was consulted, who gave a favorable diagnosis and prognosis, stating that the condition was due almost entirely, if not entirely, to ovarian trouble. On May 12, 1891, he performed a laparotomy, and found on the right side an ovarian cyst containing about a basinful of a dark-brownish liquid, and in the other ovary a dermoid cyst about the size of a hen's egg, filled with cheesy matter. There was attached to the latter a small polypoid growth, which, upon examination by Dr. Stengel, proves also to be of the nature of an adenomatous papilloma. The womb was entirely without neoplastic formation, and the ovarian condition was the only fault found. It is needless to add that the presence of these ovarian cysts was not recognized by the previous physicians consulted. The woman is at present in a rapidly improving condition.

*May* 28, 1891.

---

39. *Dermoid cyst of ovary.*

Exhibited by Dr. A. STENGEL.

This dermoid cyst was taken from the ovary of a woman recently dead in Blockley, a case of purpura hæmorrhagica. The case is being studied at the hospital in its more interesting features, and I present this specimen without taking up the subject of the origin or nature of the purpura. The spots were mostly found about the head and neck; upon one of the aortic leaflets there was a patch of acute endocarditis. The uterus and its appendages being removed, there was found on the left side this small dermoid cyst in the ovary. It is about the size of a walnut, is divided into two portions by a dense wall, and contains a mass of cheesy matter and some hair. There is also to be seen in this left ovary, removed a short distance from the dermoid, a small hemorrhagic cyst of the size of a cherry, containing clotted blood and grumous matter. In the right ovary is another cystic formation similar to the latter. At the fundus of the uterus there is a hemorrhagic condition.

*June* 11, 1891.

40. *Free fibroid tumor in abdominal cavity.*

Exhibited by Dr. J. M. Baldy.

Recently, while performing an abdominal operation for the removal of a fibroid tumor from the womb, there was found by the exhibitor, in the peritoneal sac, this small free body. It is of the size of a walnut, dense, white, and on section calcareous depositions are met at various portions of the cut surface. At one position on the outside there is a place showing where there had formerly been a pediculated attachment, now shrunken into a pucker. It had probably been free in the peritoneal cavity for some months, judging from the appearance and the calcification. It is stated by certain persons that this not infrequently occurs, and that the calcification which exists in the specimen is an evidence of a slow retrograde change which takes place in such masses when cut off from the usual food-supply; there is little reference to the freeing of tumor masses by natural methods in literature, however, and this is the first time the exhibitor has encountered an instance of it. Occasionally free bodies are found in the abdominal cavity, as abdominal stone, which are probably retro-peritoneal glands which have undergone calcification and have gradually worked their way through the peritoneum into the interior of the sac. Rindfleisch is about the only one of the pathological text-books which makes reference to the process illustrated by this specimen.

Dr. Packard remarked that the specimen shown by Dr. Baldy reminded him of one shown some time since by Dr. J. H. Packard, a fibroid tumor which was attached to the descending colon. The tumor was about half the size of a child's head at term, and was supposed to have been a uterine fibroid, which had formed adhesions to the colon and been gradually cut off from the uterus. *June* 11, 1891.

### c. MALE GENITAL ORGANS.

### 41. *Sarcoma of the testicle.*

Exhibited by Dr. J. B. DEAVER.

This specimen was removed from a boy, æt. 10 years. The scrotum had always been large, and he had been treated medically without improvement. Ten weeks before admission he was kicked on the left side of the scrotum. The scrotum at once began to increase in size. The patient appeared to be well nourished. The scrotum measured six and a half inches in its largest circumference. The superficial veins were distended. The right testicle was found perfectly movable and of normal size. In place of the left testicle, a semi-solid elastic tumor was noted connected with the integument of that side, partly infiltrating the lower portion of the scrotum of the left side; it was opaque. This was removed and proved to be a melanotic sarcoma. This is rather rare at this time of life. The most interesting part of the case was that after the growth had been removed, there was some question whether there was not going to be immediate recurrence. This opinion was held by several physicians who saw the case. I maintain that it was nothing more than inflammatory infiltration. This infiltrated area soon subsided under the application of belladonna and mercurial ointment. The boy went out of the institution perfectly well and has remained well since. While in a case of this kind we should not expect lymphatic enlargement, as the tumor was so large I opened the inguinal canal and divided the cord high up. Usually in removing the testicle we tie the cord in the scrotum.

Dr. J. H. Musser: I think that the sarcoma of the testicle shown by Dr. Deaver is of importance, in view of the fact that sarcoma, and particularly melanotic sarcoma, in this region is rare. In this case I should expect recurrence somewhere. When we find supposed melanotic sarcoma away from the eye, the internal organs, and the skin itself, there is always reason to doubt whether it is sarcoma or not. I would, therefore, suggest that this specimen be referred to the Committee on Morbid Growths.

Dr. F. A. Packard: I do not suppose that many of the members will remember that on one occasion I brought a testicle here supposing it to

be a melanotic sarcoma. On examination the tumor proved to be a large effusion of blood, with the testicle back of it.

This tumor of the testicle having been examined, the Committee on Morbid Growths found it to be a sarcoma of telangiectatic type, the blood giving it the dark color suspected of being due to melanosis.

*June* 12, 1890.

---

### 42. *Epithelioma of glans penis.*

Exhibited by Dr. Ball.

Dr. Ball presented before the Society the amputated gland of a penis which had been removed by Dr. J. B. Deaver from a patient in the German Hospital, because of the existence of a rodent, epithelioma-like ulcer on the gland on its superior right surface. Six years ago the patient, C. M., now æt. 40 years, sustained an injury to the head of the penis, a nail tearing it. The wound thus produced refused to heal, and was very painful. After a time circumcision was performed, the prepuce being rather tight, and the actual cautery applied to the surface of the sore.

Shortly after this, however, there appeared on the opposite side another lesion, assuming the appearance of a corn. The patient was in the habit of paring the mass as if it were such a growth. At another time lunar caustic was applied, but was discontinued because of the severe increase of pain. On admission to the hospital there was a rodent ulceration, the base covered with small scabs. On removal of these by soaking in alcohol, a loose cellular tissue was exposed, the edges of the patch being dense and irregular in outline. The tumor on examination was found to be of an epitheliomatous nature.

The removal was performed by Dr. J. B. Deaver, who remarked that in these cases the amputation of the penis at some distance from the epithelioma presents a sure mode of treatment so far as recurrence is concerned, as contrasted with the less appalling operation of excision of the growth.

*December* 11, 1890.

### *d.* MAMMARY GLANDS.

#### 43. *Cancer of breast.*

Exhibited by Dr. W. L. Coplin.

I have here a carcinoma of the breast, which shows some points of interest. It shows that we can have carcinoma of the breast lasting a considerable time without ulceration or symptoms, the patient discovering the tumor accidentally. It was impossible to discover glandular involvement, but when the axilla was opened the glands were found involved apparently in two layers—a condition which is not brought out in the books, but which I have noticed several times. There appears to be a superficial and a deeper layer, and when you find only slight involvement of the superficial layer you can predict that there is greater affection of the deeper glands. *February* 27, 1890.

#### 44. *Tumors of the breast.*

Exhibited by Dr. W. L. Coplin.

This breast presents a rather unusual condition. The tumor was of thirteen months' duration, and was situated at the lower internal quarter and near the ensiform appendix; indeed so near was it that the surgeon feared that he would open the abdominal cavity in its removal. The whole breast was removed, but the tumor seemed to involve only an area that could be covered by a silver dollar. The mammary gland seemed healthy, but on laying it open it was found filled with pus looking like that from a cold abscess. A tumor had been removed from the opposite gland by the elder Gross seventeen years ago.

At the last operation no enlarged glands were found in the axilla. There had been no pain, but considerable hemorrhage from a small ulceration.

I have here, also, two large tumors. This one weighed six pounds five ounces. This occurred in a woman æt. 48 years, and was of four and a half months' duration. There were large glands in the

axilla, and the tumor was removed at the request of the patient on account of its weight.

This third tumor weighed five and a half pounds, and developed in a woman, æt. 23 years. Its duration was seven and a half months. There was no ulceration. The operation was done three and a half months ago. There is now a recurrence of the growth, and a second operation will be done in a few days. There is a mass at the clavicle nearly the size of this tumor.

In both of these cases there was marked emaciation, and the general indications of the cachexia of malignant disease. There was no severe pain and no ulceration. I have spoken of this before in connection with the element of malignancy in tumors. *April* 24, 1890.

---

### 45. *Tumor of the breast.*

Exhibited by Dr. W. L. Coplin.

I have here a tumor of the breast, removed day before yesterday. It was removed by a dinner-plate operation, the wound being brought almost entirely together. The woman was 38 years of age. The breast was very large. The tumor shows no evidence of encapsulation. The axilla was loaded with enlarged glands. At the inner end of the clavicle near the articulation with the sternum was a small gland. This was removed with a piece of the superjacent skin. There was marked retraction of the nipple.

Dr. John B. Deaver: I would ask if it is the practice at the Jefferson College in removing the breast to include the deep pectoral fascia. Dr. Pilcher has advocated the removal of a portion of the deep pectoral fascia, and in cases of infiltration, the removal of the pectoral muscle also.

Dr. Coplin: Where the breast is adherent to the chest, we remove the fascia and even quite a thickness of the muscle. I might call attention to an article by Heidenhain, in which he correctly made the prognosis in seventeen cases. In fifteen he predicted that there would be recurrence from a microscopic study of the pectoral fascia.

*June* 12, 1890.

### 46. *Cancer of the breast.*

Exhibited by Dr. BALL.

Dr. Ball exhibited before the Society a growth of the right breast of a woman, æt. 37 years. The growth was of the size of a large orange, involving to a great extent the upper and outer quadrant of the breast, without adhesions to the chest-wall, and with a large ulcerated, bluish-colored, crater-like excavation on the surface. The tumor began six months prior to the operation as a small, painless lump above the nipple, and remained painless until two months ago, when it became considerably enlarged within a brief time and gave rise to severe pain. The softness of the tumor, the age of the patient, and the rapidity of growth rendered probable a diagnosis of sarcoma of the breast. The softness was so marked that prior to her admission to the German Hospital the growth had been incised and treated as an abscess by the physician in attendance. From the opening referred to above there exuded an abundant serous, at times milky and very fœtid, discharge; and the sides and bottom of this opening were covered with a cheesy deposit. There was no cachexia and there was no pain. At the operation the axilla was examined for glandular involvement, but there was none discovered.

Under the microscope the tissue of the growth seemed to be made up of considerable number of round granular cells.

Dr. J. B. Deaver: This case presented a perfect clinical picture of sarcoma of the breast. It was a tumor of rapid growth, there was absence of cachexia, the patient's age was favorable to the growth of sarcoma, there were present certain inflammatory symptoms resembling in their character those of sarcoma, and there was no axillary involvement.

As a rule, sarcomata of the breast are more favorable for operation than are carcinomata, being recurrent, but after long intervals; in evidence of which statement Dr. Deaver recalled a case of sarcoma of the breast occurring in a railroad engineer, supposed to have been caused by the frequent striking of the lever of the locomotive against the breast. Five years ago the tumor was first removed by Dr. D. Hayes Agnew, and six or eight months ago Dr. Deaver removed it for the second time, the patient being at present again attending to his work upon the road.

The President, Dr. Formad, agreed with Dr. Deaver as to the nature

of the tumor, stating that in his opinion the tumor in its microscopic appearance resembled a large round-celled sarcoma.

Dr. Jos. Hearn, without venturing an opinion upon the nature of the growth presented before the Society, remarked upon the importance of an exact diagnosis, as bearing on the prognosis of the case, between sarcoma and cancer. He stated that in sarcoma of the breast, if the breast could be lifted up from the chest-wall, the removal of the entire gland afforded a better prognosis than where the growth is of a cancerous nature, cancer frequently causing quite early adhesions of the breast to the chest-wall with infiltration of the latter.

After objections from several members as to the nature of the tumor, Drs. de Schweinitz, Vansant, and Smith regarding the microscopic appearance as that of cancer, the tumor was referred to the Committee on Morbid Growths.

The tumor, reported by the Committee on Morbid Growths, had the appearance of an ordinary cancer of the breast in the typical portions of the section shown, the round-cell appearance being probably due to the zone of granulation tissue about the growth, the result of a reactive inflammation. *December* 11, 1890.

## VII. THE NERVOUS SYSTEM.

### 1. *Trismus nascentium.*

Exhibited by Dr. M. H. Fussell.

Mrs. G., colored; hygienic surroundings good; had borne one child prior to the one from which these specimens were removed. She was taken in labor at 6 A. M. of October 25, 1889. I saw her about noon. The os was but slightly dilated. I left with instructions to be called when needed.

At 6 A. M. was hastily called, and found the child, a fine healthy male, already born. All went well until the morning of the ninth day. When I called on that morning I was told by the mother that her child had been restless during the night, and that it could not suckle. On examination I found the jaws tightly closed, face puckered by tetanic convulsions of muscles, arms drawn tightly to side of body, fingers clenched, and thumbs across palm. It could swallow, but with difficulty, and could not suckle. Twenty-four hours after, its condition was worse. Head retracted, arms and hands in the same condition as before, thighs immovable, knees slightly bent, toes flexed, great toes adducted. Child could be lifted without bending spine by putting hands under occiput and heels. The least disturbance would bring on paroxysms of convulsions. It could not swallow; its pupils were contracted; no strabismus. The umbilicus was the seat of an ulcer covered with thin pus. The child lived for twenty-four hours more, or forty-eight hours after first attack.

*Post-mortem, fifteen hours after death.—Brain* not examined. Occipital bone much depressed; sagittal suture widely open. The ulcerated umbilicus covered with a dry crust.

*Lungs* much congested.

*Heart* distended with blood.

Abdominal organs normal. Umbilical vein patulous and not the seat of inflammation.

Left hypogastric artery filled with clotted blood. Right, free.

Removed the bodies of fifth and sixth thoracic vertebræ, and found the spinal canal in its posterior part covered with clotted extravasated blood. No clots within the dura mater. *November* 14, 1889.

2. *Hemorrhage into the cerebellum and fourth ventricle, and by extension into the third and lateral ventricles.*

Exhibited by Dr. C. K. Mills.

J. C., æt. 53 years, was admitted to the nervous wards of the Philadelphia Hospital about July 15th. He was suffering from insular sclerosis and chronic parenchymatous nephritis. He had tremors in both hands, more marked on the left; tremors of the tongue and twitching of the facial muscles; also some loss of power in both arms, more marked on the left side, and this extremity was also slightly atrophied. His left leg was weak, but he had no difficulty in walking. The only intention, however, at present, is to report the hemorrhage from which he died. The patient worked in the diet kitchen, and was feeling well until two days before his death, when he began to feel dizzy and complained of headache. He was perfectly conscious, but his symptoms grew gradually worse, and in an hour he was completely unconscious. His face became cyanotic. His pulse was 72, and full. He had complete paralysis of the left side of the body, and on the chest on the left side fine muscular twitchings were observed. The pupils were slightly contracted and immobile. He had no convulsions. His temperature at the time of his seizure (one o'clock) was 96°; at two o'clock it was 98.2°; at fifteen minutes after—the time of his death—it was 98.2°. Before death he was very cyanotic, and evidently died of respiratory failure, the respirations ceasing a considerable time before the pulse.

*Autopsy.*—The scalp was much congested with venous blood. The longitudinal sinus contained no clots. The dura mater was normal. No evidence of meningeal hemorrhage was present, but under the pia mater covering the posterior and inferior portion of the cerebellum was observed a slight extravasation of blood. The vessels at the base presented a few atheromatous patches. On opening the lateral ventricles a clot was found on the left side, situated in the anterior portion of the ventricle, but not involving the brain substance. The fourth ventricle was filled with black, tarry blood. The main damage to brain tissue was found in the pons, crura, and cerebellum. The tissue in these tracts was plowed up and disorganized. The lenticular nuclei and capsules of the brain were not involved. The heart was hypertrophied, but there were no valvular lesions. The kidneys showed evidences of chronic parenchymatous nephritis. The spleen was enlarged, the liver adherent to the diaphragm and very friable. *November* 14, 1889.

### 3. *A case of Addison's disease with solitary kidney.*

Exhibited by Dr. L. Wolff.

C. W., æt. 19 years, single, hatter, native of Germany, was admitted to the medical wards of the German Hospital on September 21, 1889. His family history was good, while the previous personal history showed that he had had an attack of acute inflammatory rheumatism six weeks before admission. He convalesced therefrom and had a relapse, for which he was brought to the hospital.

On admission his temperature was 101.3°, pulse 108. Knees and feet of both legs were swollen and inflamed; bowels normal, urine also. Had some headache, which disappeared after vomiting. Over base and apex of heart were heard a blowing murmur, principally presystolic in character, giving a distinct thrill; pleuritic friction sound heard over base of heart. There was no pain on respiration. He improved very much on treatment; temperature became normal and pains disappeared, so much so that he was allowed to be out of bed. There was becoming noticeable, and more and more prominent, a yellow coloration and pigmentation of the face, with spots of black pigment scattered here and there. Later on, he complained of anorexia and pains in chest. Cardiac compensation was again disturbed, and patient was sent back to bed.

*Diagnosis:* Addison's disease, with articular rheumatism and mitral regurgitation.

Patient felt better now and then, but gradually failed and died November 4, 1889.

*Autopsy, made twenty hours after death.*—Rigor mortis well established; body emaciated; peculiar bronze pigmentation on face, with spots of black pigment scattered here and there. On opening the thoracic cavity the lungs were found distended, congested with blood, but not œdematous. There were found some pleuritic adhesions on the right side midway between the base and apex. *Heart* was distended and filled with chicken-fat clots; right-sided dilatation, with left-sided hypertrophy. Aortic valves were thickened; mitral ring covered with vegetations and thickened. There was no effusion into the pleural or pericardial sacs.

*Abdominal cavity: Liver* normal, somewhat congested. Left *kidney* was much enlarged, though it retained its original shape. It was surmounted by a very large supra-renal capsule, tightly adherent to the capsule of the kidney. On section the supra-renal capsule was found

gristly, and showed caseous degeneration. No reaction to tests for amyloid substance. The right *kidney* and ureter of right side were absent, but the supra-renal capsule of the right side was present and in the same condition as that of the left side. Its size was that of about a hen's egg. There were no adhesions to any other organs. On removal of the bladder the opening of only one ureter could be found.

*November* 14, 1889.

---

4. *A series of cerebral hemorrhages.*

Exhibited by Dr. J. L. Hatch.

The cases to be enumerated below illustrate well the importance of distinguishing between the different forms of intra-cranial hemorrhage. This cannot be overestimated, because upon the proper interpretation of the cause of the hemorrhage the life and liberty of an individual often depends. I have reference to the distinction between hemorrhages of traumatism and those of idiopathic origin.

The following cases came under my observation at different times and places. Some were met with at the Thursday morning post-mortem examinations in the University; others I found at Blockley; but the most were coroner's cases for which I am indebted to Dr. Formad.

The classification I have used is the one adopted in the laboratory demonstrations, where we weekly exhibit numerous cases similar to those about to be described.

The regularity with which the intra-cranial hemorrhages repeat themselves under similar conditions determines the conclusion that an absolute line can be drawn between hemorrhage from injury and hemorrhage from idiopathic causes.

Case I.—Italian laborer, æt. about 35 years. He was knocked from an open car during an altercation with a fellow-workman, and, falling a distance of about eight feet, struck upon his head, sustaining a fracture of the skull. The fracture extended from a point near the junction of the sagittal and coronal sutures, downward, backward, and inward, crossing the parietal and temporal bones, thence to the base of the skull, and terminating at the foramen magnum. The man also sustained a fracture of the odontoid process, which led to a dislocation between the atlas and axis, injuring the spinal cord in no small degree. He died the following day.

Upon removing the scalp many ecchymoses were seen upon the left

side of the head. Opening the skull a large extra-dural blood-clot was found immediately beneath the seat of fracture above described, about six inches in diameter and evidently due to a hemorrhage from the bloodvessels of the diploë. An interesting feature in the case is that he lived eighteen hours after the injury was inflicted.

Case II.—Woman, white, æt. 69 years. Fell from a window-sill while washing the window, striking the floor with her head. Death ensued within three hours. There was a diffused scalp hemorrhage, intra-dural blood-clot of moderate size, mainly at the base and quite prominent. There was also a blood-clot the size of a bean in the floor of the fourth ventricle. No fracture could be discovered, and there were no blood-clots in any part of the interior of the brain. The ventricles were distended or dilated by an almost clear fluid. Œdema of arachnoid was patent, and death was evidently due to shock from concussion caused by the fall.

Case III.—An Arab sailor employed upon a British vessel. He became involved in a drunken brawl and, besides sustaining other injuries, received a severe blow upon the head. Death occurred almost instantaneously. Upon opening the skull no blood-clots were visible save minute ecchymoses in the floor of the fourth ventricle between the fasciculi teretes of the medulla oblongata. Death was evidently due to shock from concussion, following so rapidly, however, that there was not time enough for a voluminous hemorrhage or the formation of clots.

Case IV.—A German shoemaker, æt. 50 years, found dead in bed. He had been unconscious about thirty-six hours, and no attention was paid him because he was thought to be drunk. He is said to have snored during the night preceding the morning of his death.

There were no marks of violence upon his head, but on opening the skull a small blood-clot was found in the floor of the fourth ventricle of the same nature as found in injuries, and a suspicion of foul play was at once aroused. When, however, the lateral ventricles were examined a large clot was found in each of them, continuous with the one in the fourth ventricle, forming a blood-cast which extended from the lateral ventricles into the third ventricle and thence by the aqueduct of Sylvius to the fourth ventricle. The vessels of the circle of Willis were highly atheromatous.

Thus a diagnosis of apoplexy was established. Blood from the lateral ventricles can exude into the fourth ventricle by the route described, but it is not known that blood in the arachnoid, which is probably always due to hemorrhage from traumatism, can extend in the opposite direction.

Case V.—A white man, æt. 55 years. He fell down in an unconscious condition and died within thirty-six hours with symptoms of intracranial pressure.

Opening of the skull revealed no sign of arachnoid hemorrhage, but the right ventricle and also the lobes of the right hemisphere were the seat of a huge currant-jelly clot due to a hemorrhage from the branches of the middle cerebral artery, which, as well as all the vessels of the pia, were in an extensively atheromatous condition. Death was evidently due to a simple cerebral apoplexy.

Case VI.—A white woman, æt. 65 years. She was found in an unconscious condition in her bed, and died forty-eight hours afterward, remaining up to that time in a comatose state, with labored and stertorous breathing.

After the removal of the calvarium nothing peculiar about the membranes was observed. Both lateral ventricles, however, were filled with clots and the substance of the left hemisphere was broken down and replaced by a huge clot. The vessels at the base of the brain were not particularly hard, but those of the pia were evidently in an atheromatous condition. The diagnosis was easily made as that of cerebral apoplexy.

Case VII.—A colored man, æt. 73 years, and a native of Jamaica. He was admitted into Blockley on the 24th of February, 1886, and placed in the Insane Department, his case being diagnosed as chronic dementia. He remained there up to the time of his death, which occurred January 9, 1890. He was a peaceable and inoffensive old man, and allowed to wander about the ward without special supervision. He was found lying dead upon the floor, and supposed to have either had an apoplexy and fallen there, or else stumbling had fallen and sustained a concussion of the brain.

At the autopsy I found the following condition of affairs: A large, flat, dark clot occupying nearly the entire outer surface of the left hemisphere and contained within the dura mater. There was marked thickening of the falx cerebri, and the falx contained an osteophyte two inches in length by half an inch in width. This was flat, sharp-pointed anteriorly, and spiculated posteriorly. It was situated in the posterior portion of the falx, commencing at the point of junction of the falx with the tentorium and extending forward along the lower margin of the falx. (This is a common occurrence in cases of chronic dementia. I have seen cases in which the entire falx cerebri was one solid piece of bone.) There was a marked area of hemorrhage about the size of half a dollar where the pia had been ruptured and through which the blood

had penetrated. The anterior cerebral arteries were very atheromatous, as was also the anterior communicating artery.

On the exterior of the skull, as far back as the coronal suture, and two inches to the right of the median line, was a marked suggillation suggestive of a fall. Death evidently occurred from concussion due to a fall, as the hemorrhage was intra-dural and opposite the point of injury.

Case VIII.—An Irish woman, admitted to the out-ward of Blockley, July 14, 1888. She became suddenly unconscious on the 15th of January, 1890, and was removed to the medical ward, where she died the following day. For thirty-six hours before death there was evident hemiplegia of the left side, stertorous breathing, and coma.

At the post-mortem the lungs were found very œdematous. The rest of the viscera were normal. The membranes of the brain were intact, and both lateral ventricles were free from clots and contained a small amount of cerebro-spinal fluid. On the right side, however, just above the lateral ventricle and in the region of the internal capsule, and anterior to the optic thalamus, was a dark-colored clot the size of a walnut. This accounted for the hemiplegia, as it was left-sided and the clot occurred in the right hemisphere. The basal arteries were atheromatous, and death was evidently due to cerebral apoplexy.

Case IX.—A white man, æt. 40 years, fell down a flight of stairs, was picked up in an unconscious condition and remained so until death, which occurred three days afterward.

The post-mortem revealed aortic verrucous valvulitis, the vegetations being quite prominent and friable, though uncalcified. The cardiac muscle was hypertrophied and the kidneys showed cyanotic induration. Nothing else pathological was observed except in the head, which presented the following most interesting features:

A large hemorrhage beneath the scalp over right parietal region Immediately beneath it there was a fracture extending from the middle of the sagittal suture obliquely to the petrous portion of the temporal bone, the right wing of the sphenoid, and terminating in the foramen magnum at the base of the skull. A huge extra-dural blood-clot, weighing eight ounces, covered the whole of the surface directly in the line of the injury (between skull and dura mater), causing a decided compression of the brain. On the opposite side of the brain was also a large clot, weighing six and a half ounces, but located in the arachnoid space (intra-dural), fairly covering the whole parietal region of the brain. Section of the brain revealed a third and probably the initial hemorrhage in the left lenticular nucleus, the clot being as large as a walnut. The

substance and the vessels of the brain did not present anything abnormal to the naked eye, and although no thrombosis could be discovered, it was evident that the hemorrhage into the lenticular nucleus was of embolic origin.

It is quite probable that the embolus had its origin in the valvular vegetations, causing the idiopathic cerebral hemorrhage into the lenticular nucleus, which in turn led to the traumatic hemorrhages through a fall causing a combination of both fracture and concussion, the former leading to the extra-dural hemorrhage at the site of fracture, the latter to the intra-dural on the opposite side of the brain.

The above-described nine cases present fairly all the types of the more common intra-cranial hemorrhages, and clearly demonstrate that the etiology of the hemorrhage can readily be made out post-mortem. Numerous cases that I have witnessed in the post-mortem practice of Dr. Formad were repetitions of the above constant types of cerebral hemorrhages. *December* 12, 1889.

---

### 5. *Lesions of fright.*

Exhibited by Dr. H. F. Formad.

I would state, in the first place, that we have no well-established lesions of fright, but I have observed three cases where death was absolutely due to fright, the persons dropping unconscious the moment they were excited, and there being no other cause to which death could be attributed.

The present specimen has the following history: The woman from whom this brain was removed was a married woman, æt. 28 or 30 years. Her husband went to work early in the morning, and after he left, his cousin entered the room where she was sleeping and attempted to rape her. This was testified to by a son 10 years of age. She at once fell unconscious, was carried down stairs, and restoratives applied. A physician was sent for, but the woman did not regain consciousness, and died in thirty-six hours.

The *autopsy* showed that she had had valvular disease of the heart. There was marked mitral endocarditis with distinct vegetations, and there were also vegetations at the aortic orifice. In the brain I found a recent hemorrhage, evidently the result of a recent embolism. The hemorrhage was in the caudate nucleus, with some softening of the brain. This readily accounted for the unconsciousness and paralysis.

Of course, it is rather vague to say that these are the lesions of fright. There certainly was nothing else to account for the patient's death. I should not lay much stress upon this case, had I not two other similar ones. The last was that of the wife of a beer-saloonkeeper. One of her husband's guests, while intoxicated, walked into her room and attempted to disturb her. She was suddenly awakened, and with a shriek became unconscious. Her husband ran up and found this drunken man in bed with his wife. She died a few hours later. There was marked dilatation of the heart, and it was quite plausible that the sudden appearance of the man in her bed had caused death.

The third case was also similar—that of a young woman suffering with intense mitral disease. She was attacked by a man in her bedroom; she became unconscious, but did not die for three days. I found embolism in the lenticular nucleus, with considerable hemorrhage.

These three cases are well established, and there was nothing else but the fright to account for the fatal result. I think that they would not have died without this provocation, or some other kind of excitement.

Dr. Coplin: Has any examination of the vessels of this brain been made? Are there any changes in the walls of the capillaries of the brain?

Dr. H. F. Formad: There has as yet been no opportunity of examining any of these cases microscopically. None of the individuals exceeded the age of 30 years, with the exception of the second case, which was 32 years old. I should not expect to find any distinct lesions of the bloodvessels. I should attribute the hemorrhage to an embolus thrown off from one of the cardiac valves. Dr. Guitéras and myself propose to make a carefnl examination of this brain as soon as it is sufficiently hardened.

Dr. A. V. Meigs: Does Dr. Formad mean to say that these individuals would have died in the same way if the organic disease had not been present? I think that the question in regard to the condition of the bloodvessels is a very pertinent one. It is not answered by the reference to the age of the patient. One of the most marked instances of disease of the bloodvessels that I ever saw occurred in a man 30 years of age, and I have sections showing quite extreme atheroma of the cardiac vessels in an infant of five months.

Dr. James Tyson: I think that the question of age is not altogether an irrelevant one. Those of us who have had clinical experience with cardiac disease cannot fail to realize that in the course of years there comes a sort of adaptation of the system to the lesion which makes the subject less susceptible to the influence of fright. Many of us can

recall cases where fright has produced most alarming symptoms in young persons, while in persons with long-standing valvular disease there is less susceptibility to this emotion.

Dr. John Guitéras: No one has introduced the question of physical struggle or resistance in connection with these cases. That has probably a good deal to do with the development of these hemorrhages. The locality of the lesion in these cases rather favors the idea that it is a hemorrhage, rather than embolic lesion. In the nuclei at the base of the brain we have hemorrhage more frequently than embolic lesions. The probability that the fright was accompanied by a struggle favors the idea that the lesion is a hemorrhage from some of the vessels which spring at right angles from the circle of Willis at the base of the brain. It must not be forgotten that cases of fright from the cause mentioned to-night are more likely to happen in young persons than in older individuals. The investigation in this case should, of course, be directed to determine whether this is a hemorrhage or an embolic lesion. In people of this age we most frequently have syphilitic lesions of the arteries. In these three cases I am inclined to believe that the struggle, rather than the fright, caused the hemorrhage.

Dr. H. F. Formad: I do not believe that there was syphilis in these cases, consequently I do not think that there was atheroma of the vessels. All the individuals were young. The case reported to-night had a number of healthy children. I agree that under such provocation there might be rupture of some of the bloodvessels in the caudate or lenticular nucleus. I feel quite sure, however, that in none of these three cases was there any disease of the bloodvessels.

*February* 13, 1890.

---

6. *Case of gumma of the temporo-sphenoidal and frontal lobes.*

Exhibited by Dr. H. M. Fisher.

Patient was unconscious when admitted to the Episcopal Hospital, and remained so until he died, twenty hours later. His wife did not know that her husband had been the subject of venereal infection. All she was able to state of the history of his illness was that some months before he had received a blow over the left side of the head, and that since then he had been subject to epileptiform convulsions. He had

complained much of pain over the left brow, and had become gloomy and morose, and had not been able to keep any position for any length of time.

He had several convulsions while in the hospital. When I saw him he was comatose. His urine was examined and found to be free from albumin. No examination of his eye-ground was made.

*Autopsy* showed that the dura was very adherent to the brain substance in the left temporal region, it being found impossible to remove it without tearing the brain. On removing the brain from the skull, a small amount of pus exuded in consequence of lacerations of the fibrous investment of the growth. In the right occipital region a flake of lymph was found and the vessels of the pia were everywhere over-distended with blood. The arachnoid over the whole left hemisphere was hyperæmic.

An *indurated mass* was found in the left temporal region, extending from a point about half an inch behind the fissure of Rolando a distance of fully three inches anteriorly into the frontal lobe and occupying portions of the second and third frontal convolutions. The dura mater over this mass was greatly thickened, forming a closely adherent capsule to the tumor, and with it bridging over the convolution at the commencement of the horizontal limb of the Sylvian fissure. The growth was one and one-eighth inches in its transverse diameter, and presented a central softening through about two-thirds of its length. It involved the gray matter of the brain to the depth of about one-quarter of an inch.

Sections cut of the growth showed under the microscope externally a dense layer of fibrous tissue, with many embryonic connective-tissue cells. From this external fibrous layer fibrous septa passed into the deeper layers of the growth and formed a network with uneven meshes, which surrounded irregular heaps of round cells. These cells were arranged in places in concentric layers around the bloodvessels, but for the most part formed these irregular heaps, many of which showed distinct fatty degeneration.

Interspersed among the round cells were numerous spindle-shaped cells.

The cell accumulations passed down into the normal brain tissue and were everywhere more deeply stained by the hæmotoxylin than the normal cells of the cerebral cortex. The mass appeared to present the characteristics of a gummatous growth or infiltration.

*March* 13, 1890.

### 7. *Specimens of Chinese brain.*

Exhibited by Dr. J. L. Hatch.

Through the courtesy of Dr. Formad, I had the privilege of making a post-mortem last March on the body of Sing Lee. He was a laundryman, but nothing as to his personal history could be learned, except that he used opium freely.

He was a well-nourished Mongolian, five feet six inches in height, weighed about 170 pounds, and æt. 35 years. The body was well formed and nicely proportioned, although there was a slight tendency toward obesity.

He had the characteristic yellow complexion, high cheek bones, and obliquely set eyes. A *queue* of some length adorned his head in addition to an insula of short, stiff black hair. This insula had an area of a circle four inches and a half in diameter. There were no marks of violence upon the body, nor was anything observed to lead to a suspicion of foul play.

On opening the thoracic cavity, the lungs were found perfectly free, and there was no effusion in the pleural cavities. The parenchyma of the lungs was perfectly crepitant throughout, and they offered nothing of pathological interest.

The pericardium contained about two ounces of fluid. The heart was large and turgid, having probably stopped in diastole. On incising it, both sides were found to contain clots—organized or chicken-fat clots, and black or currant-jelly clots.

All the valves were competent, and there was no organic disease of any kind.

The omentum was rich in fat and the intestines were greatly distended with flatus.

The liver was enlarged and fatty, and on section showed the characteristic nutmeg appearance.

The kidneys were normal in size; they were slightly pig-backed and cyanotic. The capsule stripped easily, and the cortex and pyramids appeared in good condition.

The stomach was empty, save for a few small masses of rice. Its mucous surface was greatly thickened and of a dark-red color, evidently a chronic gastritis due to alcoholism.

The other organs were all normal. There was no intussusception, no volvulus, no hernia.

One peculiarity noticed was the vermiform appendix, which was extremely long, some four or five inches, and infundibular in shape. This is constant in the Chinese, I am told, and since it occurs in the negro it would be a factor pointing to a lower phylum in the scheme of evolution.

On cutting through the scalp it was found to be extremely thick and fatty. In the occipital region it measured fully three-quarters of an inch. The skull was also quite thick, and of a form which anthropologists denominate brachy-cephalic.

This brings us to the study of the brain, which is really the subject of this paper.

Our knowledge of the Chinese brain dates back to June 21, 1886, when Dr. Charles K. Mills, before the American Neurological Society, described a brain which he and Dr. A. J. Parker had studied together, the latter having previously exhibited it before the Philadelphia Neurological Society. He was followed by Dr. Moritz Benedikt, who described three Chinese brains in the *Medicinische Jahrb.* for January, 1887.

After a lapse of over two years, Dr. F. X. Dercum published a full description of two Chinese brains in the *Journal of Nervous and Mental Diseases* for July, 1889.

This makes six brains, then, that have been described up to the present time.

Many of the peculiarities found in these brains I have been able to verify in my study upon this brain, but the probability that they are constant can only be established after sufficient data has been collected from which to deduct racial characteristics that shall be unvarying.

I shall describe the contour and topography of this brain and then compare it with those previously mentioned.

In conformity with the shape of the skull the brain was shorter through its longitudinal axis, and longer through its vertical axis, than is usual in Caucasian types, thus giving it a rotund appearance.

There was marked eversion of the orbital and basi-temporal surfaces, a point that has been noted in all the brains examined.

The brain, unfortunately, was not weighed, but it was of goodly size, a little more bulky than Dr. Dercum's brain No. 1, with which I compared it.

The frontal lobes presented a complex sinuosity of convolutions and multiple fissuration, causing the so-called "vegetative repetition" of Parker.

The parietal and occipital lobes were distinctly separate, and a "*pli de passage superior interne*" was patent on both sides. These last-named

conditions are common among the anthropoid apes, the "*pli de passage*" being constant save in *Hylobates* and *Ateles*, according to Dercum, but has never been found in the human brain, save in those of idiots.

Dr. Dercum found this condition in four brains out of seventy-five that he examined from the Institution for Feeble Minded Children at Elwyn, Pa.; and in the case of the brain of an idiot of eleven months, described by Dr. Giovanni Mingazzini, among other peculiarities these conditions also pertained.

On examining the fissuration of the brain under consideration, I find the following conditions:

*Right Hemisphere* (outer surface). — The Sylvian fissure measures 7.5 cm. in height; the anterior branch, which is normal in direction, is 2.5 cm. long, and it does not extend into the precentral as in brain No. 1 described by Dercum. The terminal bifurcations are longer than usual, the vertical one extending along the margin of the ascending parietal convolution for nearly one-third of its length. The general direction of this fissure is from before backward and from below upward at an angle of about 45 degrees. It is average in direction.

The fissure of Rolando is 8 cm. in length following the deflections. It pursues the usual direction, but is exceedingly tortuous, even more so than those of the other described brains. It extends clear over the margin on to the median aspect of the right hemisphere, and below a very small isthmus separates it from the Sylvian fissure. In the idiot's brain described by Mingazzini the fissure of Rolando is confluent with the Sylvian fissure.

The operculum is average in size, completely covering the insula. The angle of this sulcus with the great longitudinal fissure is approximately 60 degrees.

The precentral fissure is comparatively of a uniform upward direction, following closely the course of the fissure of Rolando, although not quite so tortuous. In the lower third of its course there are two short rami given off at right angles. These branches, the upper 1.5 cm., the lower 2 cm. in length, are 1.25 cm. apart at their origin and 0.5 cm. at their termination; they extend backward and forward into the ascending frontal convolution, forming a small rhomboidal lobe. The upper extremity of the fissure abuts upon the margin; just before reaching this point, however, it gives off a branch into the substance of the ascending frontal convolution, and one directly opposite into the superior frontal convolution, the peculiar arrangement of fissuration being what Wilder terms zygal. (H = h-shaped.)

The first frontal fissure is very tortuous and deep, it also is confluent

with the superior precentral. The second frontal fissure is also winding in its course, giving off many ramifications, which cause the peculiar multiplicity of small irregular lobes in the anterior frontal convolutions. This fissure is confluent with the precentral. There is no medifrontal fissure present as was the case in brain No. 1 described by Dercum.

The post-central fissure is angular rather than tortuous; it is 7 cm. long, and quite deep. This fissure is confluent with the intra-parietal fissure, and it also gives off short angular arms which extend into the substance of the ascending parietal convolution. It follows the same direction as that of the fissure of Rolando, commencing at a point just above the horizontal and back of the terminal vertical arms of the fissure of Sylvius, and extends within 0.5 cm. of the margin of the great longitudinal fissure.

The intra-parietal fissure is exceedingly long—12 cm.—extending from the knee of the ascending parietal convolution across the post-central fissure and continuing a tortuous course backward, upward, and finally downward along the occipital lobes and ends in the inferior occipital convolution. There is no transverse occipital sulcus, the latter fourth of this fissure supplanting it.

The first spheno-temporal, 8.5 cm. in length, begins at a point in the temporo-sphenoidal region just below the origin of the horizontal limb of the fissure of Sylvius. It is quite regular, and extends in an average direction from before backward, giving off very few lateral branches. One, however, is worthy of special notice: it commences at a point two-thirds of the way back and passes upward into the parietal lobes just back of the termination of the horizontal limb of the fissure of Sylvius. It terminates in a well-marked fissure of Wernicke.

The second spheno-temporal and the two horizontal occipital fissures are quite regular and normal as to size and direction.

The whole external configuration is markedly *sui generis*; especially are the frontal convolutions very tortuous and small.

The mesial surface is also quite complex in the arrangement of its sulci and gyri.

The calloso-marginal fissure is abnormal as to extent; commencing in the gyrus fornicatus at a point above the genu of the corpus callosum, it proceeds in the usual curved direction forming a "Hogarthian line of beauty," and terminates on the lateral surface in a prolongation of 1.5 cm. The entire length of this sulcus is 10.5 cm.

The parieto-occipital is slightly curved, average in direction, and just before terminating on the lateral surface becomes bifid. It does not enter the hippocampal fissure at its other extremity, as in some of the

other brains, where the gyrus fornicatus is entirely submerged, but ends below this point, having been joined by the calcarine. The lobulus quadratus is normal as to size and shape, being cut up with deep sulci, which on confluence form an H-shaped indenture.

The calcarine fissure is normal in size and direction, bifurcating at its extremity. It is confluent with the parieto-occipital. The cuneus is peculiarly divided by a vertical fissure that extends over unto the lateral surface for a distance of 2 cm., terminating within the superior occipital convolution. This division of the cuneus makes it U-shaped rather than wedge-shaped. This extra lobulation, which extends up over the margin and unto the lateral surface is what Gratiolet calls the *pli de passage.*

The lobulus lingualis is abnormally segmented by well-marked and good-sized sulci.

The collateral fissure, 7 cm. in length, is normal in position and extent. The lobulus fusiformis is divided by numerous secondary fissures which are confluent.

The hippocampal sulcus, as well as the fissure of the corpus callosum, are normal in direction and extent. The dentate and uncinate gyri present nothing out of the *norm.*

The orbital surface presents a well-marked and deep fissure for the olfactory lobe. In place of the triradiate fissure there is an H-shaped one, a peculiarity that has been noticed in other brains of a low type.

*Left Hemisphere* (outer surface).—The Sylvian fissure is longer than that of the opposite side, being 8 cm. in length, a feature noted by Dercum in one of his brains. The anterior branch is 2.5 cm. long and regular in direction. Where the fissure terminates there is an attempt at bifurcation; one small branch, however, is but superficial, having scarcely an appreciable depth. There is quite a good-sized branch given off in the first part of the latter third of its course, which extends upward into the ascending parietal convolution for a distance of 2 cm. It ends by bifurcating at right angles to its axis, thus forming a T-shaped fissure. The general direction is as in the right hemisphere.

The fissure of Rolando, 8 cm. long, is not as tortuous as its fellow of the opposite side in the upper part of its course, but the lower part is winding in direction and gives off numerous short transverse branches. Its direction is as that in the right hemisphere, and it extends over the margin of the great longitudinal fissure, where it ends. It is not confluent below with the Sylvian fissure as was the case in one of the brains described by Dr. Dercum, but is separated from it by a very narrow strip of convolution.

The operculum on this side is about as large as that of the other side,

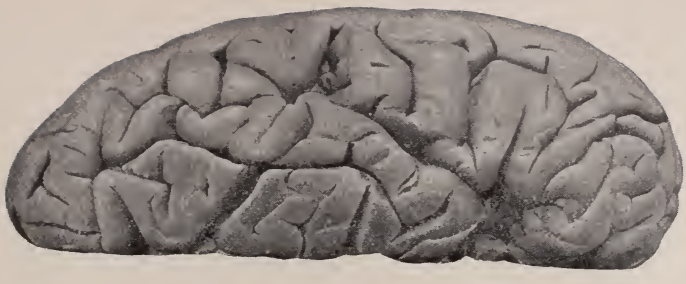


FIG. 1.—Outer Surface of Right Hemisphere.

FIG. 2.—Inner Surface of Left Hemisphere.

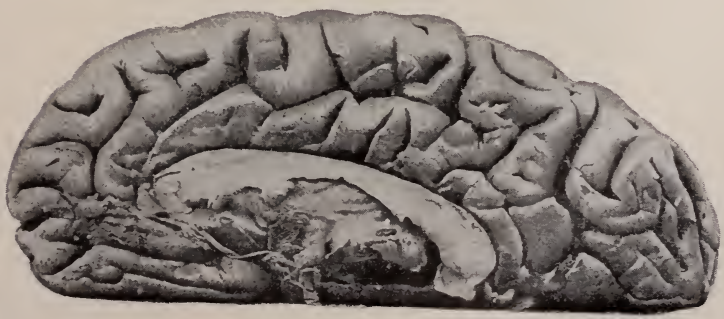


FIG. 3.—Inner Surface of Right Hemisphere.

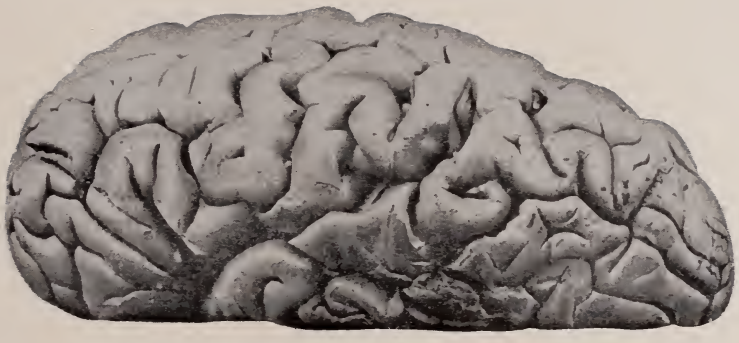


FIG. 4.—Outer Surface of Left Hemisphere.

FIG. 5.—View of Upper Surface of both Hemispheres.

and the angle of this fissure with the great longitudinal is also about 60 degrees.

The precentral fissure, 6 cm. in length, following its turns, is not as intricate as its fellow of the opposite side, and does not give off as many short branches, although there are two or three well-marked and deep but short ones. The peculiar lobe observed on the other side is here wanting. The general course of this fissure is parallel with that of the fissure of Rolando, but just below the margin of the great mesial fissure it turns forward at right angles to itself for a distance of 2 cm., where it ends in two very short bifurcations.

The first frontal fissure, 8 cm. long, is quite regular, save in the anterior part of its course, where it becomes exceedingly tortuous and gives off innumerable little sulci which ramify in every direction. It is not confluent with the precentral.

The second frontal fissure, 9 cm. long, is extremely tortuous, and is confluent with the fissure of Sylvius, extending from that point in a horseshoe direction upward, forward, and then downward, ending in branches which divide dichotomously. Along its entire length it gives off many small and irregular, but deep and well-marked branches.

The retro-central sulcus is divided by a slight bridge of convolution. Above this yoke it is continued for about 2 cm. It then turns at right angles on itself and extends backward and becomes confluent with the intra-parietal. It is sinuous throughout its entire course, and gives off many short and irregular transverse branches.

The intra-parietal fissure is not so long as that of the other hemisphere, being but 10 cm. It starts in the genu of the ascending parietal convolution, and following a more or less irregular course backward it crosses the post-central, and terminates in a well-marked transverse occipital 3.5 cm. in length.

The first spheno-temporal fissure, 10 cm. in length, is quite regular in direction and extends back as far as the second occipital convolution, where it is confluent with the *sulcus occipitalis longitudinalis inferior*. It gives off numerous small twigs along its entire length, thus aiding in the convolutionary complexity.

The second spheno-temporal sulcus is divided in its course by an insula of convoluted brain substance that is quite richly segmented.

The two horizontal occipital fissures are regular, both as to form and extent.

The external configuration of the left outer surface is much the same as that of the right side.

The mesial surface is peculiar, and has some of the same divergences from the normal type as has the other side.

The calloso-marginal fissure starts above the genu of the corpus callosum in the gyrus fornicatus, as on the other side, and curves backward and upward, cutting the lateral surface at its terminus for a distance of 1.5 cm. It gives off one or two well-marked branches upward from the anterior portion, and one downward, where it turns to ascend to the top of the brain. Anterior to this the inner surface of the frontal lobes is traversed by two well-marked, deep, and branching sulci, 4 cm. long respectively, and running parallel courses.

The parieto-occipital is well marked, deep, and tortuous, extending well over unto the external surface, where it becomes *confluent with the intra-parietal.* Below it extends downward as far as the collateral fissure, with which it becomes confluent.

There is another fissure which starts well up in the quadrate lobe; it extends downward parallel with the parieto-occipital for part of the course, but gradually becoming convergent, it joins that fissure at a point where another fissure from the front meets the parieto-occipital at right angles. This second supernumerary fissure forms a lower boundary for the quadrate lobe, which is also intersected by an arm from this fissure at its forked termination. Another, extra, short, and tortuous fissure, coming down from the parietal region, helps to cut up the quadrate lobe considerably.

The calcarine fissure is normal in size and direction, joining the parieto-occipital at an angle of about 50 degrees. The cuneus on this side is perfectly normal, being wedge-shaped, and containing within its boundaries two or three short, deep grooves.

The collateral fissure, 7 cm. long, is regular in its course. The lobulus lingualis and lobulus fusiformis, like their representatives of the other side, are cut up by numerous small but deep sulci.

The hippocampal sulcus and the fissure of the corpus callosum present nothing abnormal, and the dentate and uncinate gyri are natural in their contour and extent.

The orbital surface shows a very short sulcus for the lobus olfactorius, and the marginal convolution is quite narrow. The triradiate fissure is H-shaped, and there are other smaller and insignificant sulci that freely cut up this surface of the frontal lobe.

From the paucity of material, of course it will be difficult to say whether the peculiarities observed here are constant or not. Some of them, however, have been observed in the entire series of *seven* brains, particularly such strong features as the eversion of the orbital and basi-

temporal surfaces, the marked vertical fissuration and general confluence of sulci, then the marked separation of the occipital from the parietal lobes, and the curious undulations of the primary fissures in the frontal lobes, together with the zygal arrangement of the triradiate fissure. Also the "vegetative repetition" of Parker must not be forgotten, and some other minor points like the correspondence in length, direction, and confluence of certain fissures.

When we come to take all these points into consideration, the bulk of the evidence goes to show that the Chinese brain is of a low type, and one *sui generis*; however, we must not lose sight of the fact, that in all the cases so far reported the brains were from individuals of low caste, and as we know caste in the Caucasian brain has greatly to do with its convolutionary arrangement, we must make a slight allowance for this factor, at least until we can get data to convince us otherwise.

Dr. Formad: I am much interested in the subject of Chinese brains. I have seen some of them, but have not studied them carefully. There are certainly some peculiarities of the fissures which strike me, as a layman, so to speak, in brain studies. These are the peculiar obliquity of the fissures to which Dr. Hatch has referred, the slanting position of the orbital lobe, and the great multiplicity of the fissures.

Dr. Holmes: I could not help being struck by one fact while the paper was being read, that is, while the author was justified in using the terms that he did in description, yet when he came to the deductions he drew conclusions which were not justified. It is all very well to refer to certain conditions as similar to those in other brains, or resembling those found in the lower ape or as a reversion to the fœtal type, but when we take these conditions and predicate certain characteristics we are getting into dangerous grounds, and I feel that we are not justified in drawing such conclusions. Our modern discussion of cerebral topography leads us only to the localization of certain functions, and not of intellectual characteristics. Of course, under the old theory of Goll, certain characteristics were located in certain portions of the brain; for instance, the intelligence and will were located in the anterior portion of the brain; in the middle we had the higher sensibilities, and in the posterior the lower sensibilities, particularly the sexual. Then he went on to locate certain qualities in certain portions of the brain, so that over the frontal sinuses he located those parts which dominate expression, while further back we have firmness of character, and so forth. It would seem that in our modern methods we are getting back to the old ideas of Goll. In modern localization we have not located a single mental characteristic. They are functional characteristics. It is far from being true

that because a certain part of the brain is developed in a certain manner that certain results must follow. Because a certain part of the hand centres is developed, it does not follow that the man is a pick-pocket; or if the leg centres are developed, that he is a runner. When we come to study certain fissures and convolutions which have regard to the lower type, if we use them simply as descriptive it is very well, but we are not justified, because we find certain fissures which we find in the lower apes, in inferring that therefore the subject was at all ape-like in characteristic.

Some may remember the works of Bichat, who advocated the idea that the two hemispheres of the brain were exactly equal, and that if the great longitudinal fissure went to one side or the other it indicated some grave mental aberration. When, after his death, examination of his brain was made, it was found that his great longitudinal fissure went to one side. I think that we are not justified in drawing any definite conclusions in regard to characteristics from the anatomical study of the brain. We are now merely in the period of description; let us confine our ideas to this. Let us describe the appearances as minutely as we please, but never predicate our ideas of the characteristics of the individual from such conditions. I should like to refer to some remarks of Mr. Wylie, who showed the brain of a Mr. Wright, who was a man of great mental power. He speaks of that brain as being very smooth, as having none of the convolutions found in the brains of a high type. He remarks that the only brain he found similar was that of an idiot.

The weight of the brain comes into consideration, of course, but even that is not distinctive. We know that the gray matter of the brain is where the originative faculty dwells, while the white matter is the conducting material. The weight will depend upon the relative amount of white and gray matter. Before we can predicate anything, we must know in regard to the gray matter and how much activity it has. I think that the whole subject of characterization as regards the appearance of the brain is in its infancy, and that the specialists have built up a great building of theory on a very small foundation. We have taken the mustard-seed of truth and grown from it a great tree of theory, and all the birds of the specialists have come to rest on its branches.

Dr. E. P. Davis: It was once my good fortune to make a thorough dissection of a Chinese body, and I was struck with the thinness of the calvarium and the multiplicity of the fissures. Another part which was of general anatomical interest was that the man had supernumerary flexor tendons, so that he must have been able to perform multiple

movement of the fingers with great ease and dexterity. The same was true of the feet. This anatomical arrangement is not infrequent among Mongolians. Whether this has any relation to a lower intellectual condition, I leave to others to say.

Dr. Burr: I do not want to be a heretic, but it seems to me that we are wrong in regarding the Chinese as being of a low type of intellect. I think that we had better say that the Chinese have an intellect which is on a different plane to ours, than to say on a lower plane. In certain things they are better off than we are; they use their hands better. Therefore, if complexity of function goes along with complexity of structure, and if we can tell anything about the mental and physical functions of a man from the anatomy of his brain, I think it would be natural to suppose that the motor cortex of the brain in the Chinaman is more complicated than in the white race, and that is not so. In the same way in the anthropoid apes, the motor cortex is not any more complicated proportionally than the other parts of the ape's brain. I think also that, inasmuch as only six brains of Chinese have been examined—all of these of low type—we should be careful what conclusions we draw. Furthermore, I do not think that any man has shown that we can take the brain of any race of men and have an expert say that the brain is from such and such a race. I do not think that Andrew J. Parker, who wrote one of the best articles on the African brain, would be able to tell whether a given brain was from the African, the Chinese, or the Caucasian race.

Dr. Hatch: In my remarks I believe that I did not assert as a definite fact that the Chinese brain could be depicted from the Caucasian brain on these grounds; but this is the way, by collecting data, by which in the future it could be done. As far as localization of function is concerned, I have nothing to say. It seems to me that the degree of intellectuality would depend upon the thickness of the gray structure, and the increase of polar cells in the gray substance, more than upon any superficial extent with a large number of convolutions. I think that Mr. Parker, while he might not be able to tell the difference between the Chinese and the African brain, would be able to distinguish between the African brain and the Caucasian brain. If ethnologists did not expect by these studies to be able to distinguish racial peculiarities from the anatomical condition of the brain, I do not know what object they have in making these studies. *June* 12, 1890.

### 8. *Extra-dural hemorrhage.*

Exhibited by Dr. J. B. Deaver.

I wish to show a specimen of a case of extra-dural hemorrhage. I have been particularly interested in this kind of work, and I have trephined a large number of cases for this condition. Several of these I have placed on record in the *Journal of Mental and Nervous Disease*, for February, 1890. In the case shown to-night I did not trephine. The patient was admitted to the hospital with the following history: W. H. M., æt. 28 years, a laborer, fell ten or twelve feet, striking the left side of the head on the brick pavement. For a short time after the accident he was conscious, but then lapsed into a state of unconsciousness, which was the condition when admitted to the hospital. In addition to the unconsciousness, he had a pulse of 80, and respirations of 36, and shallow. The conjunctival reflex was normal. The pupillary action was normal. There was neither dilatation nor contraction. As far as could be made out, the two sides of the body were normal. I tested carefully for sensation and motion. The patient lying in bed undisturbed, did not attempt to make any motion, but when pressure was made over the contusion on the scalp, he would squirm and draw up the limbs, showing the condition that is described as cerebral irritation. He passed urine involuntarily. With the presence of a contusion of the scalp and the patient not having stertorous breathing, being able to swallow, with no difference in the pupils and no difference in the two sides of the body, I did not think it was justifiable to trephine.

I take the ground in the paper read before the Philadelphia Neurological Society that in all cases of head injury where there is cerebral disturbance to the extent of producing unconsciousness or semi-consciousness and the presence of a contusion, we should not rely upon the symptoms to differentiate between contusion and fracture, but that we should lay open the scalp, and explore the seat of injury. After reading this paper I was taken to task by two or three surgeons, who claimed that I was too radical, and I thought perhaps that I was. I am now sorry that I did not trephine this patient. The day after the accident he was completely hemiplegic on the left side, and spastic on the right side. The pupillary reaction was good. The conjunctival reflexes were preserved. I remarked at the time that this man was unquestionably the subject of intra-cranial hemorrhage. I thought that it was sub-dural or into the brain substance. I found that the

temperature was rising. I have observed this in all my cases, that as they neared dissolution the temperature runs up in all severe brain injuries. I have seen it reach 105° or 106°. This means death in ninety-nine out of one hundred cases.

This morning I found that the patient was dead. The autopsy revealed a large extra-dural hemorrhage, with a fracture immediately over the seat of hemorrhage. The fracture was principally in the temporal bone, but also involved the lower portion of the parietal. There was no depression, but there was separation and leakage from within out. Contusions of the scalp are very deceptive. We cannot say that the collection of blood is due to hemorrhage from the scalp. It may be the result of leakage from within out. This is a strong point in favor of interference. The brain was removed entire, and a fracture found extending through the petrous portion of the temporal bone into the middle lacerated foramen. There was a large extra-dural hemorrhage at this point. There was no symptom pointing to hemorrhage at the base.

In regard to the symptoms of hemorrhage, I will quote from the article before referred to:

"In the diagnosis of extra-dural hemorrhage the following points are to be observed:

"*Mental Condition.*—May be normal, or there may be cerebral irritation. Unconsciousness complete or incomplete, or coma.

"*Condition of Pupils.*—May both respond to light normally. May both be dilated, and show no response; or one may be widely dilated, and the other normal. When the dilated pupil corresponds to the injured side, it is caused, as pointed out by Hutchinson, by the pressure of a large clot, extending deeply down into the base of the skull, on the cavernous sinus, leading to fulness of the vessels, with protrusion of the eyeball and dilatation of the pupil. It is also accounted for by compression of the oculo-motor nerve by the clot.

"*Respiration.*—May have stertorous brething, Cheyne-Stokes respiration, or cyanosis.

"*Pulse.*—Little changed, or rapid and feeble, depending largely on the severity of the concussion; or slow and full, depending upon the severity of the compression.

"*Limbs.*—May present any of the following conditions: Hemiplegia, well or but little marked, on the same side as the one injured, indicating hemorrhage; on the opposite side, monoplegia, paralysis, twitching, convulsions, rigidity (spastic).

"*Scalp.*—Presence of contusion, or bogginess due to the injury; the

latter also due to leakage from within the cranium through a fissured fracture."

In this paper I have given the conditions for which I trephine when I suspect extra-dural hemorrhage.

"I trephine also in simple depressed fracture of the skull, with or without symptoms of compression.

"In compound depressed fractures, with or without symptoms of compression.

"In punctured or incised fractures.

"In fractures of the orbital plate of the frontal bone.

"In punctures of the cribriform plate of the ethmoid bone, applying trephine to roof of orbit at the inner angle, thus opening up the most dependent part of the anterior cerebral fossa, and thereby favoring drainage, which is a chief indication in this class of injuries.

"For foreign bodies in the brain.

"For impacted fractures.

"In gunshot injuries of the skull.

"In contusion of the scalp, simulating depressed fracture; here exposing the cranium at the seat of contusion, when, if depressed fracture is found, I trephine; and, also, if a fissured fracture, if there is any hemorrhage through the line or lines of fracture."

The point may be raised, What would have been accomplished in the present case by the removal of the clot? The probability is that we should have accomplished nothing, because there was a fracture at the base, but this fracture, which gave rise to no symptoms, might not of itself have caused death. Dr. Dennis, in his paper read before the County Medical Society a short time ago, mentioned several cases of fracture of the base of the skull with recovery. If this clot had been removed, the man would have had a chance for recovery. I am certain that if I were so unfortunate as to meet with an accident of this kind with unconsciousness, to say nothing of other symptoms of extra-dural hemorrhage, I should want the scalp laid open, and, if a fissure were found, I should want the skull trephined to see if there were hemorrhage. I have trephined a number of cases that have recovered, but I have also trephined others that did not get well. In the paper to which I have referred, I raised the point that brain surgery was probably running in a wrong direction. I think that little has been accomplished by trephining for epilepsy. I have not seen a case in which the epilepsy did not return. Brain surgery for extra-dural, intra-dural and cerebral hemorrhage should receive more attention. I may say that

Dr. Dennis has trephined for, and removed a clot from, the lateral ventricle.

Dr. H. F. Formad: I am guilty in not publishing the records of the numerous cases of cerebral hemorrhage that have come under my observation. I think that if the records of the cases of cerebral hemorrhage that occur in this city were published with some attention to the duration, some of the symptoms and other clinical features, surgeons would know more about the propriety of trephining in these cases. I think that many cases die because they are not trephined.

From what I have seen of cerebral hemorrhage I would lay down this rule, that a person who has received an injury of the head and is unconscious and survives twelve hours, has a fracture. This is certainly borne out by the cases that I have seen. In these cases the fracture is at the point of injury. It is invariably the rule that where a patient survives a few hours the hemorrhage is extra-dural. If it is intra-dural it will kill in a couple of hours. There is no exception to this. Of course, there are a number of cases of apoplexy which live a long time. In these cases we have the history to guide us.

Dr. Holmes: I would ask Dr. Deaver if, had he been able to diagnose this as a case of extra-dural hemorrhage and had he known that there was a fracture at the base, would he have trephined? The great objection urged to trephining in these cases is that you cannot know what there is beside the immediate local condition. When one receives a blow upon the skull, there may be a more severe injury at some distant point.

Dr. John B. Deaver: I should say yes, unquestionably. As I have said, Dr. Dennis has put on record cases of fracture of the base of the skull with recovery. I think that in this case the fracture at the base of the skull had little to do with the fatal result. I believe that death was due to the presence of the blood clot. Trephining in this case would have done no harm, but the reason I did not operate was because I did not believe that there was extra-dural hemorrhage. From now on I shall make it a rule to trephine in every case of head injury with a condition of unconsciousness or semi-consciousness, if I can get the consent of the friends.

Dr. J. H. Musser: I want to refer to a case of hemorrhage under the dura which occurred under my care at the Philadelphia Hospital. The patient lived two weeks and at the autopsy we found a hemorrhage as large as this without fracture.

I always thought that hemorrhage into the ventricles was very serious and followed by almost immediate death.

Dr. H. F. Formad: I think that Dr. Musser will find that cerebral apoplexy is one of the slowest deaths. The hemorrhage is gradual. In the cases that I have examined there is always a history that the person had been snoring away all day or all night.

Dr. Berlet: I wish to mention a case which occurred in 1878. The trephining was done by Dr. Wm. Ashbridge. It was not determined whether or not there was a fracture of the base of the skull. A large clot was removed and the patient recovered and is now perfectly well. If Dr. Deaver had operated the patient might have recovered.

Dr. Bodamer: I should like to mention a case which Dr. Deaver had two years ago, that of a boy shot on the left side of the head in the temporal region. The ball was not located. The morning after admission the boy had paralysis of the tongue and the side of the face, with twitching about the eye. It was concluded to trephine, and a small crack was found in a position corresponding to one of the branches of the meningeal artery. The ball was found about one inch from where it had struck. After the button of bone was removed a small clot fell out. It was not more than a quarter of an inch in diameter. There was almost instantaneous relief. The tongue and face became all right a few hours after the operation. *June* 12, 1890.

---

9. *Two neuromata from stumps.*

Exhibited by Dr. W. L. Coplin.

The specimens which I present will be of unusual interest to surgeons, and one of them will be of interest to medical men. These two specimens are from the same patient. Three years ago the arm was removed for a crush about the middle third of the humerus. Two years afterward the patient was brought to another surgeon and the bone was found protruding from the end of the stump. The bone was cut off and the arm measured at the time. A week ago it again became necessary to amputate on account of protruding bone, and these neuromata were found. There had been no pain. It was found that during the year the bone had grown three-fourths of an inch.

I have here the inferior maxillary division of the fifth nerve. The large end is where it came out of the dental foramen. The patient had long-standing neuralgia. The trephine was applied at the angle of the jaw and the nerve easily found, but it could not be pulled from the

canal. A second incision was then made over the inferior mental foramen, and this small tumor was found on the end of the nerve.

I should like to hear the opinions of the members present in regard to the condition of the nerves after amputation. In an interesting little book which I have read, by Baling, of London, on *Injuries of the Nerves*, he reports the results of a large number of experiments, and in one or two instances, reported in his original paper but not included in his monograph, he observed that if he examined the nerve two or three weeks after suture of the divided ends, that the sutures were apparently surrounded by new growth of a fibrous tissue. Two or three of the colleagues of Baling have reported similar instances after injury of the nerves. In one case of crush of the arm which I have had the opportunity of seeing, where the nerves and vessels were bruised, ligation of the brachial artery being required, the arm was not amputated, but on account of the extreme pain in the cicatrix a portion of the nerve was removed and some of the cylinders could be found in the cicatrix at the time.

The first specimens which I presented I am inclined to think are true neuromata. When removed they were quite soft. I should like to know from anyone who has had experience with nerve injuries whether they have noted fibrous deposits around the nerves. I shall make some experiments on this point and should like to know if anything of this kind has been seen.

Dr. Burr: In Dr. Weir Mitchell's old book on *Injuries of the Nerves* he states that in some cases there is a swelling of the ends of the nerves, a bulbous condition, sometimes a true neuroma, sometimes false. This book was written twenty years ago, but very little has been added since.

Dr. Coplin: I had the opportunity of seeing one case which consulted the late Professor Gross. The thigh had been amputated during the war and the pain seemed to be distributed through the entire lower extremity of that side. He localized it in one toe, the heel and other parts. He could foretell almost every change in the weather. The pain was frequently so severe as to require a grain and a half of morphia to control it. At the operation eight or ten neuromata were removed. These were all fibrous. Whether true neuromata give rise to no pain while fibrous neuromata do cause pain, is a point yet to be settled. In my experience true neuromata have not caused pain, while the fibrous neuromata have. *June* 12, 1890.

10. *Specimen of porencephalus.*

Exhibited by Dr. B. Brooke.

This specimen is from the brain of a woman who for a time was in the insane wards of the Philadelphia Hospital. The mental symptoms were not very pronounced. There was at times incoördination of ideas, but otherwise there was nothing very striking about the case except that the woman could not be quieted, but kept constantly yelling. She had been operated on for umbilical hernia, which had left a large fistula.

The post-mortem was made forty hours after death. On opening the brain the anterior part was found in a condition of what was diagnosed as porencephalus. Large cavities were found, varying in size from that of a quarter of a pea to a pea and a half or two peas. The condition was well marked on both sides anteriorly. On the right side there were two in the lenticular nucleus, one extending from the anterior to the posterior part and the other quite small. The same condition was found on the right side posteriorly. On the left side the cavities were small and linear in character. I have some of the specimens here, but they have contracted a great deal from the action of the alcohol. The whole change was limited to the white matter; the gray matter was not at all involved.

*September* 12, 1890.

---

11. *Multiple thrombi of circle of Willis.*

Exhibited by Dr. J. Leidy, Jr.

Dr. Joseph Leidy, Jr., presented the circle of Willis from a case of double hemiplegia, as the result of multiple thrombi of the right and left middle cerebral and basilar arteries, from a patient, æt. 40 years, supposed to be syphilitic; male, colored.

The case was interesting as showing the transitory symptoms which frequently occur in occlusion of the arteries of the base of brain, explained by the free anastomosis which exists between the cortical vessels and the large right posterior communicating artery.

The writer has had an opportunity lately to observe the great variation of the arteries which form the circle of Willis; indeed, anomalies are the rule rather than the exception. Several shown to the Society to-night strengthen this statement: the anterior communication is double

in one; in another it arises from the right anterior cerebral and bifurcates, the branches joining the left cerebral one-half an inch apart. In another case the posterior cerebral is given off by the right internal carotid; the right posterior communicating in one specimen is but a capillary, while the left is the size of the basilar, five times the calibre of its opposite. From their anomalous condition it has occurred to the writer that we have an anatomical fact of sufficient importance to assist us in explaining the rapid disappearance of cerebral symptoms in one case of cerebral embolism or thrombosis. The above are but a few of the many dissections which, however, are reserved for further use. What was of interest in the above case was the existence of complete aphasia from occlusion of the right middle cerebral, the slow return of the power of speech (four days), and the occurrence of paralysis of the left brain some days after, which was ushered in by fibrillary convulsions of the right side and unconsciousness, passing into coma, finally death.

At the *autopsy* there were spots of softening, old and recent, over the striated bodies, but the convolutions were normal.

*November* 13, 1890.

---

12. *Account of a case of tumor of the cerebellum, complicated by dropsy of the ventricles; exploratory operation; tapping of ventricles; death on the fifth day.*

Exhibited by Dr. F. X. Dercum and Dr. W. J. Hearn.

(*History and symptoms by Dr. Dercum.*)

G. M., æt. 28 years, was admitted to the nervous wards of the Philadelphia Hospital under my care November 12, 1890. He had been previously in the German Hospital, and Dr. Frese, chief resident physician of the same, gave me very kindly the following account of the patient:

He had been admitted to the German Hospital five months ago, complaining of headache (which was general) and pain in the back of the neck. He was also subject to epileptiform attacks, during which consciousness was lost, while his arms and legs became very stiff. An ophthalmoscopic examination disclosed a well-marked choked disc on each side, with much impairment of vision; marked deafness was also noted. His symptoms gradually increased in intensity, until, finally, blindness and deafness were absolute. He was also subject to spells of great excitement, during which he would scream at the top of his voice. His actions

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

were for a time so violent that he had to be for a short period confined in the cell of the hospital.

Dr. Ball, under whose immediate care he was, says that the man did not impress him as being actually insane during these attacks, but that he screamed at the top of his voice, as though making a vain attempt to make himself hear. During the intervals nothing unusual was noted about his movements or about his gait. His walk was neither spastic nor ataxic, but simply like that of a man who was generally weak. His urine was free from albumin or sugar.

When admitted to my wards his condition was as follows: Marked general weakness, most marked in the legs; absolute loss of sight and hearing; and also, as far as we could determine, absolute loss of smell and taste. Cutaneous sensibility seemed to be everywhere well preserved. No paralysis of sphincters. Slightly diminished knee-jerks.

The patient was a German, and communication with him was only possible by writing with the index finger upon the palm of one of his hands in German script. Under these difficulties we learned again of his headache, that it was agonizing, and, if possible, steadily growing worse; and, further, that it was most intense upon the left side and anteriorly. When his head was gently percussed no pain was elicited anywhere except in the left frontal region. When his grip was tested it was found that the right hand was markedly weaker than the left. The epileptiform attacks were also repeatedly observed. In these his arms and legs would become very rigid, and to the rigidity would be added a rapid clonic movement of small extent. The head was thrown backward and held in a fixed position, and in one of the attacks in which I saw him it was slightly turned to the left, while the eyeballs rotated outward and to the left.

After an ophthalmoscopic examination, Dr. de Schweinitz reported marked double optic neuritis, dilated and immovable pupils, and nystagmus; also slight divergent strabismus, due to loss of fixation.

At the German Hospital, Dr. Frese had made a very thorough trial of anti-syphilitic remedies, and had, indeed, noted some improvement during their use. This improvement, however, proved to be transient. Notwithstanding when admitted to the nervous wards mercurial inunction was again resorted to, but without noticeable result.

The patient's condition growing steadily worse, I called my colleague, Dr. Mills, in consultation. After reviewing the facts, we deemed it probable either that the man was suffering from a tumor in one of the silent regions of the brain or from some more general disturbance, such as an internal hydrocephalus. Various facts pointed to the left frontal

region as the seat of the disturbing cause. In the first place, the headache was most marked in this region; secondly, this region was decidedly painful to percussion, while the remaining surface of the skull was not; thirdly—a fact not mentioned above—the right side was most involved during the epileptiform attacks; and, lastly, the right arm was notably weaker than the left. An absolute diagnosis was not possible, nor was any attempted. Dr. Mills inclined toward the theory of tumor, the writer toward that of hydrocephalus, either primary or secondary to some other cause.

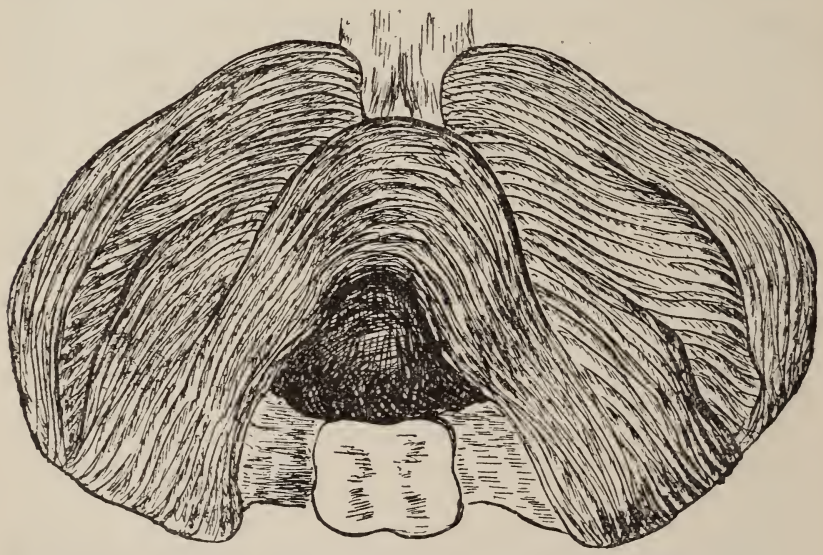
The propriety of an exploratory operation was discussed, together with Dr. W. Joseph Hearn, of the surgical staff, and finally, when marked mental failure had begun to make itself noticeable, decided upon. When admitted the man had been as intelligent as could, under the circumstances, have been expected. To questions written upon his hand in his native language he gave intelligent answers, and frequently volunteered information regarding his condition. After the lapse of some ten days, however, it began to be more difficult to communicate with him. Words and sentences would have to be written again and again before he would comprehend their meaning, and his replies were made less readily and were less satisfactory than before. Evidently he was losing ground.

Finally, on November 26th, two weeks after admission, an exploratory operation was undertaken in the presence of the neurological and surgical staffs of the hospital, Dr. Hearn operating. The details of the operation I leave, of course, to Dr. Hearn. Suffice it for me to say that the exploration was directed to the left frontal region, a large oblong opening being made in the skull slightly in advance of the hand centre and extending well forward. In addition to great vascularity of the brain, no noteworthy feature presented itself until the dura was opened. Here it was found that the brain bulged greatly, and further, that it fluctuated markedly upon palpation. Exploratory puncture was, after a brief consultation, decided upon, with the result that between five and six ounces of fluid escaped from the left lateral ventricle. The previously protuding brain now sank within the cranial cavity, so that its surface was half a finger's breadth from the surface of the skull. The operation was terminated at this point.

In a few hours the patient rallied and recognized those about him, as before, through the sense of touch. On the following day I carefully examined him, and found that the power of smell and taste had undoubtedly returned, and the resident in charge maintained that there had been a distinct return in the sense of hearing; this I failed to con-

firm. There was absolutely no change in the blindness, though the pupil reacted distinctly to light. These symptoms of improvement were, however, maintained but a short time. On the third day a hernia cerebri began to make its appearance, and concomitantly there set in progressive mental failure, coma, and finally death on the fifth day.

*Autopsy.*—December 2, 1890, the dressing being removed, a small amount of bloody and watery discharge escaped from the wound, which was free from odor; but little attempt had been made at union, and under the flap some effused blood was found. Through the trephine opening a large soft mass extruded, flecked here and there with dark-green masses, looking like altered extravasated blood. The hernia itself



Tumor of cerebellum. Dark portion in centre of engraving represents tumor.

projected an inch or more beyond the opening, and for an inch or more over its edges; it was reddish in color and thoroughly disorganized. The calvarium was removed, the hernia readily slipping back through the trephine opening. Its inner surface was found very irregular, being studded with minute osteophytes, especially in the left parietal region; it was not especially adherent to the dura. To either side of the attachment of the longitudinal sinus were found marked and numerous depressions, the bone being in these areas quite translucent.

The dura was everywhere tense, except in the left temporal region and in the immediate neighborhood of the wound. Veins of dura in

neighborhood of longitudinal sinus full and prominent. Pacchionian bodies quite large and numerous, and corresponding to areas of thinning in the calvarium. During manipulation of dura in removal, escape of cerebro-spinal fluid was noted from the wound. Inner surface of dura smooth, but showing numerous thickenings corresponding to the roughness on the inner surface of the calvarium.

The hemispheres exhibited no peculiarity other than a change of consistence in the left hemisphere in the neighborhood of the wound. Nowhere was any induration. On removing the brain and inspecting the base, the basi-temporal surfaces, and especially the lips of the temporal lobes, were soft and œdematous. The cerebellum showed no appreciable change of consistence in either hemisphere or in its middle lobe. The pia-arachnoid showed some infiltration along veins and fissures.

On opening the left lateral ventricle it was found excessively dilated. At the highest point of its anterior branch, involving neither the inner nor the outer wall, was found a small reddish wound—the inner end of the puncture made by the trocar. The right lateral ventricle was also found very much dilated, though less than the left. Foramen of Monro also large and dilated. Velum interpositum infiltrated and whitish. Choroid plexuses not excessively cystic. Walls of the third ventricle unusually pale. No noticeable change in quadrigeminal bodies, pons, or crura. On carefully separating the quadrigeminal bodies from the cerebellum, a large jelly-like mass, the size of a pigeon's egg, was revealed, occupying the central lobe of the cerebellum. Peripheral portion of the tumor was excessively soft; centrally and to the right it felt much firmer. It was firmly attached to and merged with the white substance of the right hemisphere, and appeared to have originally sprung from this region. It was simply in contact with the white substance of the central lobe and with that of the left hemisphere, having hollowed out a space for itself in these structures by pressure and absorption. Below and anteriorly the roof of the fourth ventricle had been partially destroyed by the same process.

In reviewing the symptoms, it is remarkable that no ataxia was at any time present. Even the nystagmus was not decisive, as it is known to occur in disease of the second frontal convolution. Again, it would have been impossible to explain the total loss of hearing, smell, and taste through cerebellar symptoms alone. Evidently these symptoms must be referred to a great general increase of intra-cranial pressure. Such increase of pressure was afforded by the excessive internal hydrocephalus, the latter itself having its cause apparently in the occlusion of the aqueduct of Sylvius through pressure by the tumor. It can,

perhaps, be readily understood how an increase of intra-cranial pressure, associated also with œdema, as noted in the autopsy, could lead to a loss of taste and smell. Whether the blindness is to be attributed to a like cause or to descending neuritis, I will leave to Dr. de Schweinitz to discuss. It seems, however, that, as regards the deafness, it was probably a direct result of the increased pressure. It is readily conceivable how increased intra-cranial pressure could affect the functions of the labyrinth, as there is a direct communication between the space of the perilymph and the intra-cranial cavity by means of the aqueducts of the vestibule and cochlea. On the other hand, a descending neuritis of the auditory nerves is not inconceivable.

*Remarks on the operation, by Dr. Hearn.*

In the performance of the operation there was nothing especially marked in the preliminary steps. The bone was quite soft and was readily perforated by the trephine. The opening in the skull was made in the left frontal region with the idea of a possible tumor at this point, but no growth was found; however, as soon as the button of bone was removed and the dura mater opened, the brain projected up and through the opening; it pushed up and out of the opening in an extreme manner, the intra-cranial pressure being greater than in other cases upon which I have as yet operated.

Not finding any tumor-mass in the opening or in the immediate vicinity, because of the tremendous pressure within the brain, it was decided to puncture the ventricles with a view of relieving, at least temporarily, the increased tension, and to make an exploration by means of the puncture. This was done, and the trocar directed downward, backward, and somewhat outward in the direction of the ear, the instrument entering at the upper part of the lateral ventricle; and three or four ounces of a serous fluid being evacuated, the brain at once sank below the level of the internal plate of the skull.

Nothing resembling tumor formation was discovered in making this aspiration, and after fixing in place horsehair drainage from the ventricular cavity, the wound was dressed. In the use of this means of drainage a mistake was probably made. At first the man seemed to gradually improve, the intra-cranial pressure being relieved, and there were evidences that the sense of hearing to a degree returned after the operation. Soon, however, this poor drainage failed and the case failed with it, the intra-cranial tension returning and causing the appearance of a large hernia cerebri.

If I were to be asked to operate on a similar case, I should avoid the use of the horsehair drainage and put into the path of the trocar a small glass tube or some other means of free drainage. The effect of the operation seemed to be favorable, the recognition of persons being probably somewhat improved, and the auditory sense seeming to return in slight degree. In this connection it was mentioned by the resident physician that after the operation, while there did not seem to be any return of sight, there was noticed a distinct light reaction of the pupils.

Dr. Charles K. Mills: From this case we may learn some points as to the local diagnosis and treatment of such cases. From the patient's condition and his symptoms it seemed certain that he was suffering from brain tumor, and probably a tumor situated in the antero-frontal region of the brain, although a tumor in one of the cerebellar hemispheres was considered. Of the symptoms presented at the time, and which now seem prominent, and evidently those upon which the diagnosis should have been made, two or three should be especially noted.

The first of these was the pain in the back of the neck and head, to which as an early symptom perhaps more force should have been given. The total deafness, coming on as it did, just as does the blindness in the case of the choked-disc cases of tumors of the brain, was especially notable. When tumors of the brain occur in association with total deafness, they are especially likely to be found in or near the position of this growth. In this case I should liken the development of the deafness to the production of choked discs. As the orbit is in communication with the cerebro-spinal cavity, so the internal ear communicates through a small canal, and if choked disc is produced by pressure causes, or by the extension of inflammatory processes along the nerve tract, here, in a similar way, has probably occurred a sort of auditory choking. The pressure in this case was in the immediate neighborhood of the internal auditory apparatus. The obstruction of the iter led to the distention of the lateral ventricles and the production of intense general intra-cranial pressure.

The character of the spasm—a bilateral one of an explosive nature, a tonic spasm of all the extremities upon which was imposed a clonic movement—is also suggestive. A spasm arising from terrible irritation of the fifth nerve in the dura is similar in character. It is true that from tumor in the extreme frontal region we may have spasm, but were it located on one side of the brain, it is not likely that the spasms would be evenly bilateral as in this case. The nystagmus was also an important symptom.

The tapping of the ventricles brings up the question of the propriety of such procedure under any conditions as far as hope of cure is concerned. I cannot look upon the measure as any but an unphilosophical one, except in one or two affections; perhaps, for instance, in certain cases of hydrocephalus in which the size of the bony encasement of the brain is controllable. In this case it should be done gradually, with constant pressure applied to the outside of the skull, the course of the operation running over weeks or months. It may also be resorted to when pus or blood has been diagnosticated in one of the ventricles. A beautiful balance of pressure exists between the fluid within the ventricles and that without, just sufficient to preserve the proper position and relations of the brain substance. If this be disturbed, positive hurt to the brain may occur. The same reasoning applies to porencephalus. For temporary relief, however, ventricular tapping may sometimes, as here, be justifiable.

I may be allowed to take exception to the opinion as to drainage in such cases. It is probably better not to drain, but if the ventricles are to be drained at all for temporary results, I would not have a rapid form of drainage, because of the much greater disturbance of the pressure-balance thus induced between the ventricles and the exterior of the brain, but would prefer the slow and more gradual drainage.

Dr. Wharton Sinkler: The case in hand has bearings upon the practical relations of both the operation and the diagnosis of tumors in this position. The symptoms of lesions of the cerebellum are by no means constant; but there were here symptoms which are commonly ascribed to tumors of the cerebellum. It is to be said that absent from this case were certain symptoms which are to be expected in cerebellar tumor; for example, lesions of the middle lobe of the cerebellum as a rule are accompanied by ataxia or unsteady gait, but nothing of this sort was observed. On the other hand, the pain in the occiput, the nystagmus, and that curious symptom which is noted in cerebellar tumors, namely, absence of or diminished knee-jerk, was present.

The loss of the senses, gradual and total, was probably due to the gradual development of excessive intra-cranial pressure, but I agree with Dr. Mills as to the futility of draining away the fluid in these cases of intra-cranial pressure with the expectation of any but very temporary relief.

Dr. G. E. de Schweinitz: I had the opportunity of examining the eyes of this case two weeks before operation, and found a high grade of what was formerly known as "choked disc," a term no longer so sharply limited to certain cases as was done when this nomenclature was first

introduced. Each disc was swollen eight dioptres, the swelling being gray-white in color, confined to the intra-ocular end of the nerve, and unassociated with retinal changes save only one small hemorrhage on the outer side of the swollen area of the right eye. The pupils were fixed and dilated. There was total blindness, lateral nystagmus, and divergent squint.

The complete deafness from which this man suffered rendered it impossible to communicate with him except by writing German words upon the palm of his hand. Hence it was difficult to decide whether the divergence was due to paralysis of a portion of the third nerve, or to the loss of fixation from the blindness. It seemed, however, that the excursion of the eyeballs was good in all directions, and that hence the squint was not paralytic. You all know, as was first pointed out by Hughlings-Jackson, that it is possible to have extensive optic neuritis with the preservation of perfect or but slightly impaired central vision, and I have myself seen and recorded several such cases. Here, without the appearance of retrograde change in the discs, or the onset of atrophy, there was absolute loss of vision.

It is a clinical fact, the explanation of which is not quite clear, that in the optic neuritis associated with tumors of the cerebellum there is often from the earlier stages very complete loss of vision. This fact, taken into consideration with the height of the swelling, the lateral nystagmus, and the absence of all other localizing symptoms, with perhaps the single exception of the deafness, led me to describe the case to my house doctors as one, in all probability, of tumor of the cerebellum, involving the flocculus. As has been observed, from the specimens which lie upon the table, the tumor has a situation in this region. At the post-mortem examination I removed the eyes, which I have not with me to demonstrate, as they are not yet prepared for section, but of which I may say that the sheath of the optic nerve was distended with fluid, as usual the greatest distension being a short distance behind the eye, narrowing close to the sclerotic, the whole producing a somewhat ampulla-shaped swelling. When these eyes have been prepared, hardened, and sectioned, I will make an exhibit of them.

Dr. Dercum has stated that I will dwell upon the mechanism by which intra-cranial disease sets up an optic neuritis. It is well known, of course, that von Graefe originally described two conditions seen by the ophthalmoscope, one of which he designated "descending neuritis," having as its characteristics slight change in the discs and a tendency to invade the adjacent retina, and where the inflammation was assumed to have travelled directly from the inflamed mèninges to the optic nerve;

and the other which he designated "*stauungs papille*," characterized by great intra-ocular change, hemorrhages and the like, and which he explained as due to an effect on the circulation of the eye by increased intra-cranial pressure obstructing the return of the blood from the eye by compression of the cavernous sinus. This theory ceased to be tenable when the demonstration was made that the free communication between the supra-orbital and facial veins nullified the influence of pressure on the cavernous sinus. From that time on a series of theories have been developed to explain the mechanism of changes in the intra-ocular end of the optic nerve associated with intra-cranial lesions, and for which the suitable general term "papillitis" has been suggested by Lieber, because it does not commit the appearance to any unproved theory in pathology.

I will not occupy your time by reviewing the various hypotheses which have been advanced, but would state as my belief that in a great number of cases the production of papillitis in intra-cranial disease depends upon an inflammation which may be traced along either the sheath or the nerve, and that the resulting papillitis is slight, or becomes intense and presents the appearance of mechanical congestion, the difference arising from causes which are not yet known. If, at the same time, there is distention of the sheath of the nerve with fluid, as there was in this case, but which is not always present, this intensifies the process in the intra-ocular end of the nerve, especially, as has been pointed out in recent investigations, if this fluid possesses pathogenic properties.

To recapitulate, the eye symptoms in this case were significant, and at least indirectly pointed to cerebellar tumor, in so far as the presence of a high grade of papillitis associated with complete blindness, together with lateral nystagmus, are concerned, the latter symptom, however, not being necessarily of localizing importance, inasmuch as it could occur simply in a blind eye, and, moreover, is seen also in lesions in the anterior portion of the brain, as Dr. Mills has pointed out.

Dr. Sinkler will remember that we have studied together at least one case of almost certain cerebellar tumor in which the symptoms are not unlike the one that comes before us this evening, namely: high swelling of the intra-ocular end of the optic nerve, early and complete blindness, and violent headache unassociated with other localizing symptoms. The best explanation of the loss of the other senses seems to be that which bases it upon the effect of the greatly increased intra-cranial pressure, owing to the accumulation of fluid in the lateral ventricles.

Dr. John B. Deaver: I think this is the third case in the city in which the tapping of the lateral ventricles has been done, and in all without any ultimate result. I must confess that I cannot as yet commit myself

as favorable to this operative procedure, except when done to remove a blood-clot or a collection of pus. The operation when done for the removal of a simple serous fluid (to relieve intra-cranial pressure), is certainly the application of a very active therapeutic measure to accomplish but a temporary purpose. If, as Dr. Mills has stated, the idea of continuous drainage is unphilosophical, must not the operation to establish such be a questionable measure?

Dr. Hearn has referred to two complications following the operation, one occasioned by the ventricle refusing to drain properly, and one by the development of a hernia cerebri. The former, I am inclined to think, would not have occurred if, instead of horsehair, a rubber, or better, a silver drainage-tube with flanges, perforated so that it could be fastened to either the head or the dressing, had been used. The temporary blockage of the drainage, and the consequent increased intra-cranial pressure occasioned thereby, were probably the active factors in causing the hernia cerebri.

Prof. Dennis, of New York, has reported a case in which he tapped the lateral ventricles for intra-cranial hemorrhage, removing a blood-clot therefrom. In this case the patient died, but I cannot help regarding such a condition as one of the few demanding such operative measures.

Dr. M. V. Ball: I should like to call attention to an interesting symptom in the case, which has not as yet been mentioned in connection with the history or discussion. While in the German Hospital a marked polyuria was noted, as much as sixteen to twenty-six pints of a pale urine of a specific gravity of 1004 being passed by the patient within the twenty-four hours. At the same time there was a corresponding polydipsia, nearly the amount of fluid being imbibed during the same time. There was no sugar or albumin in the urine.

During his presence in the German Hospital there were intervals of apparent seeing of light, which were, however, of very short duration (a few seconds), although of frequent occurrence. His feeling (sense of touch) was extremely acute and delicate, the patient being able to distinguish between the different persons about him in the ward by the sense of touch alone.

Dr. F. X. Dercum: While at the present it is possible while looking back to recognize the importance of this or that symptom, it should be remembered that in attempting the actual diagnosis the symptoms were elicited only with the greatest difficulty, and many of them were vague and indistinct. In fact, the operation itself, in the uncertainty of the case, was undertaken in the light of an exploration only.

Several years ago I had under my care a case presenting many of these symptoms, except perhaps the deafness, which was less marked. In this instance I decided against an exploratory opening, and upon the post-mortem table, to my chagrin, was found a tumor of the frontal region which might easily have been removed by the surgeon, as it had sprung from the membranes. Recalling this case, I cannot help regarding the present one as having demanded exploratory operation, and I look upon the operation of trephining in this light as having been eminently justifiable. So, too, a proper exploration of the brain demanded the insertion of the trocar and the aspiration of the ventricles, the trocar being really a means of diagnosis as to the nature of the fluid (pus, blood, etc.) causing the symptom of brain fluctuation, and also as to the presence of any new growth in the brain in the neighborhood of the skull opening.

In this instance the tapping led to the inference that there really did exist a brain tumor, the probable position of which, however, precluded further interference. Thus, in the presence of such symptoms as were afforded by the case, and in the presence of impending death without any operation, the trephining and tapping seem to me to have been very proper procedures, and I should not hesitate if placed in the same position again to advise the same steps.

Dr. Hearn: While there may be, perhaps, questions raised as to the propriety of tapping the ventricles in such cases as these, the appearance of such excessive pressure as to cause the brain to bulge up and out of the trephining opening as it did, seemed to me to be quite sufficient to justify its relief, if only for a short while. It would seem that after the operation, before the reaccumulation of the fluid, that the man's condition was really improved, since there is evidence that the sense of hearing returned to him, at least in a slight degree. Further, I have seen pus in this very position post-mortem, where operation was refused; and I should expect that trephining in such cases would be of great benefit, temporarily if nothing else; so that I should look upon the operation of tapping as really proper from the point of view of an exploration, possibly of great benefit, and almost certainly not of very serious consequences, inasmuch as the measure is only employed in the last stages.

Note by Dr. W. W. Keen:[1] The bulging of the brain after opening the dura was so great that had tapping not been done it would have been impossible to readjust the flap of scalp so completely as to bring the

[1] Dr. Keen was present at the operation, but was unable to attend the discussion.

edges of skin together, and the same hernia would have followed. At the same time we should have had no knowledge of the reason for the increased intra-cranial pressure, and there would have been no relief to the intense and agonizing headache. The relief to this last symptom at once, and the comfort it afforded the patient, was of itself a sufficient reason, in my opinion, to justify the tapping. *December* 11, 1890.

---

13. *Abscess of brain after fracture of skull.*

Exhibited by Dr. A. J. Smith.

The specimen, shown by the kindness of Dr. Formad, was removed from a coroner's case in the University Hospital. The individual from whom it was taken was an Italian lad, æt. 17 years. He was brought to the hospital in a semi-unconscious condition after an accident. He had been handling a can of dynamite, when the substance exploded, driving a portion of the can into the frontal region of the brain, fracturing the skull into splinters over a small area in this region. The fragments of bone and several pieces of the can were removed by Dr. John Ashhurst at the hospital, and for a short time the lad apparently improved. After several days, however, he died, having developed symptoms of meningeal inflammation; and at the autopsy this abscess of the anterior portion of the frontal lobe was found to exist. A small fragment of the can and several bony spicules were discovered in the abscess cavity, which is about the size of a large hickory-nut. Unlike the abscesses which develop in the brain apart from injury, there is here no zone of white softening about this abscess, the suppurative matter being limited by the brain substance itself, which is in a congested condition. The pia in the anterior portion of the brain is injected, but there is no distinct suppurative inflammation. The patient, when aroused from his stuporous condition, was able to answer questions. *January* 22, 1891.

---

14. *Case of porencephalus in a child, aged six years.*

Exhibited by Dr. J. H. Lloyd.

This specimen was removed from the body of a patient in the Home for Crippled Children, a boy, æt. 6 years, dead from scarlet fever. The

history of the case is but an imperfect one. There were observed bilateral spastic hemiplegia, impaired mental faculties, and epilepsy. The lateral tracts were evidently in a condition of descending degeneration. In the left hemisphere of this brain there is an immense excavation with sharply defined margins, looking almost as though the brain substance had been cut out. It seems to be due to a sinking in of the brain substance, and occurs about the island of Riel and the fissure of Rolando, which seems to extend rather further forward than usual. At the lower portion of this excavation an opening communicates with the lateral ventricle.

The etiology of this condition is of considerable interest. There are several theories which have been offered to explain it. I believe that one of the most important questions in this connection is the pressure upon the brain in prolonged and instrumental labors. One case at least of porencephalus which I am able to recall, not in my own practice, occurred in just such circumstances; and in such cases of prolonged labor evidences pointing to the existence of medullary hemorrhage are not rare. Such hemorrhages beneath the meninges and in the medullary substance of the brain might easily lead to cystic formation. Vascular occlusion, too, might cause this cystic degeneration of the brain, although it is difficult to see its connection with birth palsy; it might, however, occur later in life.

Another theory of the causation of porencephalus is that of a basilar kyphosis, the existence of a slight twist in the basilar bones of the skull (Richter). For instance, in certain rhachitic skulls there are, more or less frequently, imperfections in the basilar bones; the sella turcica is sometimes turned slightly to one side, by which deformity the falx cerebri is brought against the side of the brain, particularly against the corpus callosum. In this manner pressure is exerted upon the veins of Galen, and this leads to cyst formation. It is possible that this may be the cause of bilateral porencephalus, although it is not likely that it would induce a unilateral affection of this nature.

Strümpel advances the idea that the condition is induced by a poliocerebritis, by a degenerative inflammation and atrophy of the polar cells in the cortex of the brain, the periganglionic spaces being in consequence enlarged, and eventually leading to cyst formation. This manner of formation may be operative in some of these cases, and perhaps it has an influence in the causation of them all.

Dr. C. K. Mills: I have had the opportunity to see a number of cases in life in which the diagnosis of porencephalus had been made, and have examined a few of the specimens discovered post-mortem. I do not

think that the direct interference from the pressure of instruments on the fœtal head in delivery or the pressure in difficult natural labor upon the head has much influence in determining the lesion of porencephalus. In about eighteen cases which are upon record with details of the autopsies, such a cause is not at all prominent; and only in a few of them is there any record of difficult labor. These cases, as other cases of idiocy, arise rather from the result of some maldevelopment than from any direct mechanical cause. Of those theories which Dr. Lloyd has mentioned, the theory of basilar kyphosis seems to me especially credible.

I have seen no evidence in this and other cases which have been under my observation that there had occurred a primary hemorrhage; although, of course, old cysts of hemorrhagic origin may show but little trace of their hemorrhagic nature. It would appear to me rather that this cystic formation of porencephalus is due to some cause interfering with the development of the brain. The microscopic appearances are those of sclerosis of the organ, and from the evidences presented in most cases it would seem that the process had occurred in the interior and advanced outward, and had not originated as a sclerotic change of the cortex and advanced into the internal structure. Such an idea, in a measure, points to basilar arrest. I have seen one case, which I presented before this Society, not entirely like this one, but bearing some points of similarity. It was the case of a negro who died in the Philadelphia Hospital, showing practically, although not so notably as in the present instance, a condition of porencephalus, especially marked in the cerebellum, and with an area of atrophy in the opposite hemisphere of the cerebrum. Apparently the primary lesion in this case was to be found in the pons. The man was of middle age, and died some years after of a hemiplegic attack. Examining the pons, there was discovered a small hemorrhagic cyst, which was probably directly in the line of the fibres connecting the cerebrum and cerebellum. It had apparently caused arrest of development of the hemisphere of the cerebrum and of the opposite portion of the cerebellum. I could easily understand how pressure from below, as from a kyphotic bone, an angulation of the bone at the occipito-sphenoidal juncture, could lead to constriction of the corpus callosum, atrophy of the commissural tracts, and porencephalus. All of these theories, however—that of poliomyelitis of Strümpel, of vascular obstruction, of basilar kyphosis, or of pressure at time of birth—fail to get at the real root of the process; there is something back of all of these, just as is seen in cases of microcephalus or anencephalus. To-day there were brought into the Polyclinic, from Vineland, six cases

of idiocy and imbecility. In one of these, at least, there exists pretty surely a condition of bilateral porencephalus; another suggests occipital porencephalus, presenting hemianopsia and unilateral convulsions; a third has Gothic palate, small head, strabismus, and convulsions; two others present mental deficiency, and one of them motor; the last shows strabismus of an alternating variety and some loss of mental power. Here are pretty surely two cases of porencephalus, one almost certainly, and another (the one with the hemianopsia) probably; and in none of these six cases is there any history of mechanical cause, especially as connected with difficult labor. *February* 12, 1891.

---

15. *Abscess of the brain.*

Exhibited by Dr. H. F. Formad.

The patient from whom this specimen was taken was a boy who had been hurt in the head several months ago. The injury was not recognized, except as a scalp wound, and apparently the recovery was easy and complete. But after a time he began complaining of intense headaches and of failure of the sight, and eventually was admitted to Wills Eye Hospital. While here he became totally blind, five days after which he died. These specimens exhibit the lesions found at the autopsy. As may be seen in the skull, there is a distinct fracture in the left frontal region; there are spiculæ extending into the brain; and here in the left frontal lobe toward the central fissure there is an abscess. The abscess is surrounded by a sac wall, a pyogenic membrane, and about the whole there is an area of necrosed brain substance, of white softening of the brain tissue. In the abscess there is about an ounce of purulent matter, and in the softened area about the abscess there is a quantity of softened matter, reaching perhaps two ounces.

Dr. Burr stated that the case came into Wills Eye Hospital with an optic neuritis, worse in the right eye. The condition passed from bad to worse and the patient became totally blind, not because of any localization of the brain disease, but from the development of choked disc.

*February* 27, 1891.

### 16. *Brains of idiots.*

Exhibited by Dr. A. W. Wilmarth.

The following specimens which I present before the Society this evening, will serve to illustrate some of the conditions found in the brains of the feeble-minded.

This first specimen comes from a case in which we unfortunately have no family history. It is stated that the child fell from a height of twelve feet in infancy, falling on its head. Spasms followed at once, ceasing in a few months. Several years after they recommenced and continued until death. The boy was a complete idiot. During childhood he never walked in a straight line, but always in circles. Later in life he acquired the habit of spinning, "dervish" fashion, with extreme rapidity, especially when inspired by the sound of music. He died of epileptic spasm.

The left occipital lobe was completely changed into a mass of connective tissue. The left temporal lobe was shrunken and sclerosed. There is a markedly atypical arrangement of the convolution, a condition often found when brain growth is interferred with very early in life. The left hemisphere is of good size and well formed.

The second specimen comes from a middle-grade imbecile. Speech hesitating. There was some defect in his sight, but its exact character was not ascertained. Could remember things *told* him easily, but not school exercise that he must learn by the sight. Epileptic from birth. Death resulted from phthisis. Obstetrical forceps were used at his birth. In the posterior third of the first and second frontal convolutions of the left hemisphere is a circular cavity nearly one inch in diameter (porencephalus). In front of this cystic area is a narrow, vertical band of sclerotic change, corresponding closely in outline to an obstetrical forceps-blade; and diagonally opposite, the right occipital lobe shows similar changes. The occipital lobe of the left hemisphere exhibits a mass of small, ill-developed convolutions, resembling in size and appearance a mass of angle-worms (agenesis).

The third specimen was taken from a patient with bilateral infantile paralysis, existing certainly from the time when it should begin to walk. How much before this time is not known. History of severe illness during his first year furnishes a possible cause for the condition. The child seemed to understand spoken language to a limited extent; apparently possessed ordinary skin sensibility, and some use of all the

special senses; had nearly full use of the muscles of the face, and to a less extent of the left arm. In the brain may be seen a rather broad band of sclerosis involving the motor region on both sides, causing a shrinking of the substance of these areas.

The fourth specimen illustrates to what extent destructive changes may proceed in the brain without destroying life. It is from an epileptic idiot. Could speak distinctly but had very complete hemiplegia of the left side. The left hemisphere is fairly developed. On the right side nothing of the original brain tissue remains, except very small portions of the frontal convolutions. The rest is replaced by a small mass of cicatricial tissue.

These specimens are typical of pathological changes which occur in the brains of children as a result of inflammatory or traumatic conditions. The theory generally accepted is that feeble-mindedness is, as a rule, the result of non-development. This is true to a certain extent, but not nearly as frequently so as is supposed. In one hundred and ten autopsies made at the Elwyn Institution, well-defined cerebral disease was found in over fifty per cent. of the cases, not counting abnormalities of the skull, thickening of meninges, etc.

Dr. Smith asked the speaker as to the relation between specimens such as shown and cerebral pressure at birth, particularly from the use of the obstetrical forceps. This point, ably advocated by a proportion of observers, is strenously denied by others. He referred to the theories of the origin of porencephalus from circulatory alterations depending upon basilar kyphosis and insufficiency of the foramina in the base of the skull, and from embolic influences.

Dr. Laplace called attention to the possibility of protracted life with marked cerebral injury; referring to a case of injury of the brain then under his care where the patient had had a fencing foil thrust five and a half inches into the brain substance, but was still living twenty-seven and a half days after the injury, but with hemiplegia, aphonia, and aphasia.

Dr. Formad asked Dr. Wilmarth in relation to the existence of asymmetry of the skull in these cases, and whether abnormalities in the shape of the skull were of value in the study of these patients during life.

In answer to the remarks made by these members, Dr. Wilmarth replied as follows: As to the size and shape of the skull, it may be said in general that while sometimes the head is of average or even of large size, this is the rare exception, the head being generally below the average in circumference.

When, as in the last specimen presented, there is marked flattening of the brain, there is apt to be some corresponding flattening of the skull on the affected side. The proportion of cases where tumor is found is small. Traumatism as a causative factor is also small, though more frequent than tumor.

That the pressure of obstetric forceps may injure the brain and disturb its growth seems difficult to doubt, inasmuch as in many cases where there is a history of very difficult labor, with deformity of the head from pressure, every other reason for mental defect is often wanting. As such results from forceps-pressure has been seriously questioned at times, I was interested some time since to look up the condition of speech in those where we had a history of instrumental delivery. (It will be remembered that in the most common position of the head the forceps-blade would rest over or near the third frontal gyrus.) In over seventy-five per cent. speech was absent or markedly defective.

It is very credible that porencephalus may often be dependent on kyphosis in idiocy. In a very large proportion of cases, where idiocy is not the result of infantile disease, deformity of the base is found, especially exaggeration of the bony eminences. Accurate measurements have never been taken in our autopsies. *June* 11, 1891.

---

### 17. *Addison's disease.*

Exhibited by Dr. J. Tyson.

A. K. B., æt. 34 years, shoemaker, was admitted to the medical wards of the hospital of the University of Pennsylvania, with asthenia, June 5, 1891. He presented himself a few days earlier at the dispensary on account of spinal curvature. He had worked up to a short time before consulting us, and denied all cough, but said the physician who attended him said he had Bright's disease. He was so exceedingly weak that he was taken into the wards. He presented a pitiful appearance—emaciated, hollow-cheeked, and stooping. Examination soon discovered that what at first seemed sunburn was peculiar pigmentation, which was particularly marked on the neck and arms and other exposed situations, but was also found on the trunk and elsewhere. Notwithstanding his denial of cough, physical examination promptly discovered disease at both apices. The urine was examined with negative results. The diagnosis

of Addison's disease was accordingly made. He died quite suddenly after he was a few days in the wards.

At the autopsy it was noted that there was a blotchy pigmentation of the skin, particularly well marked about the flexures; and there was also some slight deposit of pigment upon the mucous membranes. On opening the thorax the pericardium was found firmly adherent throughout to the epicardium; there was no evidence of the deposit of any tubercular tissue in the pericardium. The heart was quite small, weighing with the attached pericardium but 180 grammes; the walls of the viscus thin; the muscle of normal color and consistence; the endocardium of cavities and valves unchanged. The pleural cavities were also obliterated by adhesion formation; at both apices were found small areas of tubercular deposit, with small cavity formation and softening, so that on the removal of the lungs from the thoracic cavity these portions tore in a ragged manner. The tuberculosis did not extend in any degree to the rest of the lungs; in fact the lower lobes were practically free from tubercular deposit. The bronchial glands were dark, with a brownish tinge, enlarged and rather firmer than normal. The abdominal viscera were practically normal, save the adrenal bodies. Both of these were enlarged and hard, the left weighing 24.5 grammes and the right, with a small bit of adjacent tissue preserving the neighboring ganglia, 48.5 grammes. These organs were of a white color, very dense, and cut like hard fibrous tissue. On section on the interior of each was found cheesy material, arranged in small pockets throughout the dense mass; there was preserved no trace of the original structure so far as the naked eye could observe. The neighboring sympathetic masses were visibly increased in size, of a pinkish color, and on microscopic examination presented a marked degree of cellular infiltration with connective-tissue formation, a beginning sclerosis.

The cheesy matter in the mass was stained for tubercular bacilli, but without success; the tissue about the cheesy portions properly prepared and stained in carbol-fuchsine, however, showed the presence of bacilli.

Dr. James C. Wilson: These specimens resemble very much those which I exhibited several years ago before this Society, taken from the body of a practitioner of medicine, in which case the abdominal sympathetic ganglia and the communicating nerves were extensively implicated, and the adrenals were enlarged, hard, and tubercular. The first symptom manifested in the case mentioned was an intense feeling of weakness, of a peculiar periodic character. As the case advanced there was found to be slight involvement of the pulmonary structures in a probable tubercular disease—there developed a pigmentation in the

flexures. This rapidly increased, the patient becoming eventually much bronzed. One of the most troublesome symptoms manifested during the course of the case was the occurrence of an intense, irregularly recurrent pain in the epigastric region. Death in this case, too, came suddenly; and the specimens, as stated, were quite like those before the Society at present.

Dr. Allen J. Smith took up the point of the condition of the sympathetic system, urging the belief that the symptoms of Addison's disease do not depend *per se* upon the tubercular or other destruction of the adrenal bodies, but that as the result of such condition in the capsules the neighboring tissues, the sympathetic ganglia and all, become involved in the sclerotic changes, and failing in their proper functions produce the symptoms. He stated that he not at all infrequently found adrenal bodies which showed but little remaining structure from fatty and cystic change, without the slightest evidence of Addison's disease. He remarked the high proportion of Addison's disease cases among the insane, and suggested the idea of both being related to sympathetic fault; he also referred to the occasional coexistence of Basedow's disease, recognized as due to fault of the cervical sympathetics, and Addison's disease.

Dr. Egbert called attention to the fact that in these cases of Addison's disease the occurrence of shock as an etiological factor is noted in various text-books, as Reynold's *System*. The speaker recalled a case which occurred when he was a student in Princeton in the person of one of his fellows. The young man, who came from a family not tainted with tubercular history, and who had been in excellent health, as a rule, received a heavy blow upon his knee, from which he suffered more or less severely. From the time of this injury his health gradually became bad, and passed eventually into a well-marked case of Addison's disease, with pronounced bronzing, the occurrence of attacks of weakness, and the development of tubercular disease of the lungs. The case was suddenly fatal, as in the present instance. *June* 11, 1891.

## VIII. TUMORS NOT OTHERWISE CLASSIFIED.

### 1. *Peritoneal sarcoma.*

Exhibited by H. W. Cattell.

F. V., male, æt. 58 years, married, baker, born in Germany, coming to this country in 1852, was admitted to Philadelphia Hospital and to Dr. John H. Musser's wards, September 3, 1889; for the last sixteen years has been employed as night watchman for an ice company. Father died at the age of 64; was sick two or three years; became greatly emaciated; had a diarrhœa. Mother died at 92 years; lost two sisters at the ages of 31 and 48 years; a sister and brother living.

Patient has had six children, four of whom died in childhood. Ten years ago he was in the Presbyterian Hospital. Notes of his case could not, however, be obtained from that hospital. He says he was there four months, and was troubled with vomiting, diarrhœa and pain in the region of the stomach; at that time became much emaciated. Recovered and returned to his work, though he has had occasional pains in the stomach since; no vomiting.

He was again taken sick the latter part of July of the present year (1889); began with vomiting, pain in the region of the stomach and diarrhœa, which continued up to the date of admission, September 3, 1889. Since admission has lost flesh and strength; at first had a mild diarrhœa, which soon responded to treatment. There has been some epigastric pain, no vomiting. The urine contains albumin and granular casts.

*September* 23. A mass the size of an orange can be felt in the region of the stomach, just below margin of the ribs between nipple and mid-sternal lines, movable, dull on percussion, moderately tender.

*October* 3. Complains at times of epigastric pain, some nausea, no vomiting; weight this date, 135 pounds; former weight, 160 pounds.

9*th*. Had Ewald's "test breakfast" this morning; three hours later gastric juice was secured by means of a stomach-pump. There was no hydrochloric acid present.

13*th*. Administered salol, grains xv, at 5.30 P.M.; catheterized at 7 and each hour thereafter till 10 P.M. Salol was present in each specimen thus secured, most intense discoloration in the 10 o'clock specimen.

15*th*. No special change up to date. Bowels constipated.

29*th*. Complains of an unusual amount of epigastric pain; has vomited on two or three occasions.

He was again admitted to the hospital on January 10, 1890, and the following history elicited: Has been ill for four weeks, and has vomited a great deal, especially after eating; complains of pain in epigastric region; has lost much flesh; appetite poor; bowels irregular, now loose; hiccough present. The temperature, pulse, and respiration chart showed the temperature to be subnormal, reaching, three days before he died, to 96.2° F.; pulse increased to 100–112, and respirations 20–24. The patient died on January 14, 1890. The patient had been put on a nourishing diet, whiskey and milk. For pain, morphia; for diarrhœa, bismuth and paregoric.

*Post-mortem, held twenty-four hours after death.* The man was emaciated, weighing about 130 pounds, and looking to be æt. 60 years. A tumor, the size of a baby's heart, could be plainly felt. The tumor was hard and movable, and was situated at the joining of the umbilical, epigastric, left hypochondriac, and lumbar regions, lying slightly more in the left lumbar. On opening the abdomen the omentum was found to be much thickened, and on raising this the tumor could plainly be seen where the transverse colon made its bend, and the colon was firmly attached to the anterior surface of the tumor. The spleen could be felt in normal position, very much roughened and with small shot-like prominences. Apparently no connection between tumor and spleen. The kidney was felt beneath the peritoneum in normal position, and it has no connection with the tumor. The tumor sprang from the splenic omentum from behind, and was not connected with any of the organs of that region. There was no metastasis. On taking the tumor out it was found to be irregular and lobulated, weighing two pounds three ounces; the anterior surface pale and red alternately. At lower border was a notch which might easily have been mistaken for the notch in an enlarged spleen. Posterior surface especially vascular. The tumor has the appearance and cuts like a fibroma. There was nothing of interest about stomach or pylorus. The intestines showed slight gastro-enteritis. The *liver* weighed four and a half pounds, and had a peculiar Scotch-granite appearance; very hard in texture, and on section had lost its lobulated appearance. *Kidneys* weighed ten ounces, left slightly the less, pig-backed and having the usual signs of parenchymatous nephritis. *Chest:* old pleural adhesions on right side; left lung congested, especially in lower lobe; right lung being in same condition. *Heart:* slight pericardial effusion; weight, ten ounces; aortic valves stenosed; coronary

arteries slightly rigid. The tumor on microscopic section seems to be a soft fibroma.

My thanks are extended to Drs. Musser, Allyn, Voorhees, and Rosenau for the clinical history and for their assistance at the post-mortem, and to Dr. Robert Formad for the preparation of the slide.

*January* 24, 1890.

---

2. *The organogenic energy of tumors occurring in organs.*

Exhibited by Dr. A. J. Smith.

Among the characteristics of tumor formation considerable weight has been attributed by writers to the absence of organogenic energy in their production. The histogenetic theory of tumor formation of Virchow and his school, based on the identity of tumor elements and tumor tissues with elements and tissues normal to the adult or embryonal structure, does not embrace, except in the most meagre way, any attempt on the part of the neoplasmata to develop the anatomy of an organ. While it is recognized that a given tumor may contain the necessary tissues to the formation of an organ—for example, epithelial tissues, fibrous tissues, and bloodvessels—the absence of organoid arrangement in a cancer is regarded as an essential feature; and further, the possibility of a histioid tumor, composed almost, if not entirely, of a single tissue or tissue class, undergoing such alterations in arrangement and alterations in cellular shape as a consequence, is not given any place in this view of the formation of tumors.

There is, however, a class of histioid tumors—the sarcomata—in which, possibly because of the developmental nature of their tissues, there may be cited several examples of changes from the usual types entirely apart from any tendency to degeneration, and evidently tending in a progressive manner to the formation of organoid structures. This feature is especially marked in organic involvement by the sarcomatous tumor, and is in these cases usually an attempt to reproduce in the neoplasm the structure and elements of the organ in which the tumor develops. These alterations occur not only in those growths primary to the organ, and invading the tissues about them in such a manner as possibly to permit their organoid structure to depend upon remnants of the original organ, but they may occasionally be met in secondary and clearly circumscribed and encapsulated sarcoma nodes. The original form of the

sarcoma cell, with its large, clear, single nucleus, may occasionally be found with a pronounced epithelioid type, and its usual round or spindle shape entirely changed in conformity with the demands of the attempted structure. Possibly, too, it may be said that the intercellular matrix may take part in the general process, and assume the characteristics necessary to the organoid simulation.

Blackburn,[1] in describing a primary sarcoma of the right adrenal removed from a patient in the Government Hospital for the Insane at Washington, D. C., remarks upon the histology of the tumor (a large round-celled sarcoma): "Though no proper glandular structure can be found, the sarcomatous cells have wonderfully preserved the shape and general characteristics of the cells of the supra-renal body. Fields may be found which admirably show this curious tendency of sarcomata to reproduce the characteristics of the mother tissue."

Pilliet[2] describes a similar primary sarcoma of the right supra-renal capsule. In the histology of this tumor the writer regards it as a spindle-celled sarcoma, but in places there was a peculiar arrangement of these sarcoma cells in groups, the cells being irregular in shape and branched, and about these groups and within them between the cells there was a marked fibrillar substance—the whole arrangemt reminding one of the medullary structure of the gland.

A similar arrangement of the intercellular substance in numerous delicate fibrillæ, arising, perhaps, from the sarcomatous cells themselves, may be noted in the sarcomata of the brain, the gliomata. In such tumors, too, there are a considerable number of the tumor cells with a stellate, ganglionic appearance, although their lymphoid characteristics and relative size are maintained.

In the case of the multiple growth in the liver of a young man æt. 21 years, from which the accompanying microscopic section was made, associated with a history of a severe blow over the liver within a year of his death, the painless character of the illness, the age of the patient, and the general and histological appearances of the growth pointed out its sarcomatous nature. The tumor, while not especially peculiar in its appearance, suggests, from the arrangement of its elements, a strong resemblance to normal hepatic structure. There is a regular alveolar nature, which might be regarded as akin to the hepatic lobular arrangement. The cells of this tumor are closely and evenly placed within this simulated lobule, and while all the clinical features pointed to the sarcomatous

[1] Journ. Amer. Med. Assoc., March 31, 1888.
[2] Bull. de la Soc. Anat. de Paris, July, 1888.

nature of the growths, the individual cells have lost the regularly lymphoid appearance. The nuclei are smaller, and the type of the cells closely tends to that of the epithelial. Alveolated sarcomatous presenting alveoli of such conspicuous size and filled by so many cells (thirty to forty in the larger ones), are rarely seen except as growths in alveolated or lobulated structures, although occurring in small numbers (one, two, or three in an alveolus); these alveolar sarcomata usually are found in the skin, bones, and muscles.

Another example of this strange tendency to the reproduction of the structure of the host-organ or mother-organ is represented in this second microscopic section. The tumor from which this preparation was made was a small encapsulated sarcoma node occurring in the left kidney, in the cortical substance, near the median line and above the middle of the organ, causing a tuberous appearance upon the surface. The patient was a woman in the medical wards of Blockley Hospital, and died under the care of Dr. J. H. Musser from multiple melanotic sarcomata, the primary tumor being in one eye. The nodule shows but little melanosis, a not rare feature in these growths secondary to primary pigmented tumors. There is, however, a very evident attempt in this case to reproduce the tubular structure of the kidney in places. While the major portion of the section is made up of undoubted sarcoma elements of the ordinary round form, here and there may be found clumps of cells arranged in a circular manner as if lining a tubule. The fine intercellular connective-tissue fibrillæ, however, may be seen not only as a sort of basement membrane, but passing between the cells themselves. The cells are in many instances of a cuboidal shape, and the relation of protoplasm to nucleus is slightly larger than normal, causing these cells to tend toward the epithelioid type. Some of these whorls, perhaps, are pericanalicular in relation to the blood-channels; but there are many that can have no such explanation, and must apparently be regarded as assumed by reason of some other and unknown interference.

Such observations, further, may be made as to the tendency in the sarcomata of the myelum of bone to present in their constitution giant cells—a form of cells common in the formative stages of osseous material.

While these examples are by no means convincing, an examination of such occurrences in relation to each other seems to point to one of several possibilities that should be considered in the study of tumor formation. It is possible that the tendency evinced by these growths is inherent, and that there does exist, at least in the sarcomata, a true generative tendency. It, however, does not appear so likely that the

influence to this organoid growth is a property peculiar to the tumor cells as that the mother- or host-tissue may exert a power tending to overcome the pseudo-plasmatic nature of the invading growth. The absence of any evidence of such influence in relation to the other tumors may be accounted for by the fact that sarcoma cells are cells of an embryonal character, and more likely to change of form and change of arrangement than the cells of a chondroma or a cancer, for example, which are more adult in their nature. An analogous influence is summoned by Cohnheim and Maas in their studies in metastasis to explain the reason why, when certain cells of normal character are introduced within the healthy organism, their short period of development is followed by their absorption and entire disappearance—due, as these observers think, to a resistive power held by the tissues themselves. In the examples above narrated this resistive power is but a step extended; failing to produce the destruction of the invading cells, the host-tissue stamps its own peculiarity of growth on the growing tumor, especially upon the sarcoma, because of its embryonic type.

Dr. Coplin: I have prepared a paper which I had hoped to present to the Society, bearing upon the causes why tumors continue to grow in spite of the general wasting that takes place in the other tissues of the body. This has not been brought out in any work of which I have knowledge. The theory of reduced physiological resistance seems to be the one which has been generally accepted, except the germ theory of tumor formation. But there are certain elements which do not seem to have been taken into consideration. The points which I bring out in my paper are that in malignant growths the bloodvessels are almost devoid of walls; that they are not under the influence of the nervous system as are the bloodvessels of other parts. Their nutrition is, therefore, continuous. All of the material supplied them is utilized for cell-growth. The last point is that the growth of embryonic tissues is different from the growth of normal tissue. In the development of the embryo prior to the differentiation of the tissues, we know that cell-multiplication and cell-growth is more rapid than it is after the tissues assume distinct types. For these and other reasons embryonic tissue seems to have the ability to grow upon pabulum which is not adapted to the nourishment of the adult tissues. If we accept the view that the marrow of bones, the spleen, and other organs have anything to do with the elaboration of the blood for the tissues, we must believe that there are elements in the blood not assimilable by the adult tissue. It may be that the tumor removes from the blood these elements prior to the time that they become suitable for the use of the adult tissues, so that

the tumor lives and grows upon the pabulum intended for the other tissues. All have noticed that in malignant tumors a marked cachexia will develop without apparent reason. I remember a case of sarcoma of the breast in which there was no pain nor ulceration, although the patient became greatly emaciated. The tumor was removed on account of its excessive weight. She immediately gained twenty-five pounds. In a few weeks the tumor recurred, and at once, although there was no ulceration, the emaciation began to increase. After the second removal the patient again improved, and was doing well the last time I saw her.

Dr. A. V. Meigs: It is proper to call attention to the Bradshaw lecture, by Mr. Norman Moore, on "The Duration and Distribution of Visceral Growths," published in the *Lancet* for August 31, 1889. He comes to the conclusion that primary and secondary growths have much the same character as the cells from which they originate. Further, he seems to accept the view that the growth of these tumors is like the origin of the tooth—that there is simply a down growth of the epithelial layer, which is gradually closed off and forms the tooth. The same thing occurs in carcinoma or sarcoma. The gist of the lecture is that the primary and secondary growths have much the same character as the cells from which they originate.

Dr. H. F. Formad: I have seen the lecture referred to by Dr. Meigs While these remarks are applicable to primary tumors, I think that they do not apply to secondary tumors. In sarcoma of the supra-renal bodies, it is remarkable how much the structure of the new growth resembles that of the supra-renal body. This is also true of the spleen and of the thymus gland; it is true of the kidney. It is very clear why it is so in these cases. Here we have a direct transference of the cells into tumor-cells. We have purely a mesoblastic structure which cannot give rise to epithelium. When the cells get ready to form a tumor, they just keel over and make a tumor. This is a well-established fact, but I do not think that it has been pointed out in print before. It is not true of the liver. In the liver we have a hypoblastic structure. If sarcoma occurs there it occurs in the connective tissue.

Dr. John Guitéras: I believe that this is the only case of secondary sarcoma in which the attempt has been made to show that it resembled the tissue in which it grew rather than the original tumor. We should have to examine this very closely, for we know that the tendency of secondary growths is to resemble the primary growth. What I saw in this specimen seemed to be a sarcomatous mantle around vessels. The statements, too, which have been made are against all recognized laws of

pathology, for, as a rule, secondary growths are like the original growth and have no resemblance to the tissue in which they grow.

Dr. H. F. Formad: I would add that I do not see how secondary growths can be influenced by the organ in which they originate. Secondary growths are absolutely embolic. I am satisfied of that not only by microscopical examination, but by actual experiments which have been made in my laboratory. I have succeeded in making in this way as nice a cancer as was ever seen. Squamous epithelium has been introduced and grown very nicely. I think that it is absolutely proven that secondary growths are not influenced by the structure in which they grow, and that the secondary growth is like the primary, no matter where it grows.

Dr. A. V. Meigs: I can support the views expressed by Dr. Smith thus far: My experience is that secondary growths do not always resemble the primary growth. I have a series of sections of carcinoma in which the primary disease was in the glands and secondary development in the lungs, and I would defy anyone to recognize the sections as from the same morbid growth. I looked this morning at sections from a tumor in the stomach and in the liver in the same individual, and the appearances were absolutely unlike. *February* 12, 1890.

---

### 3. *Alveolar sarcoma of skin.*

Exhibited by Dr. W. L. Coplin.

This specimen is of interest on account of the difficulty surrounding the diagnosis. This tumor was removed from a young lady, twenty-five years of age. Over the frontal eminence there was a mass, and from this there ran a mass of glands down in front of the ear to the clavicle. Dr. Keen operated in the clinic, making an incision on each side of the mass, and removed it. The tumor on the forehead, according to the history, originated in a wart. There was marked cachexia and the patient was run down in general health. The tumor is of sixteen months' duration.

The interesting point in the case is the appearance of a growth presenting the features of epithelioma at so early an age, and the fact that it sprang from a papilloma, which was probably congenital. The diagnosis of this growth is uncertain, but I think that it is an alveolar sarcoma, which is rare, springing from the skin. *March* 13, 1890.

4. *Peritoneal sarcoma following injury.*

Exhibited by Dr. H. F. Formad.

I will show these specimens and refer to them briefly, because I am anxious to bring up the question of the relation between sarcoma and injury. There are here three cases of peritoneal sarcoma with clear histories of injury. In one case, that of a child of eight years, the duration of life after the injury was seven months. In another case, that reported by Dr. Brown at the last meeting, the child lived four months after the injury. The third specimen is from a dog whose back had been broken and was under treatment in the veterinary department of the University of Pennsylvania. He remained there about a year and then died, and sarcoma was found. In these three cases the question arises whether the sarcoma was present before the injury was received. We know, however, that it is very common to have sarcoma develop in bone and other parts of the body which, in the majority of cases, have a traumatic history. In one of these cases the liberty of a man depends upon whether it is decided that the sarcoma was due to to a blow or whether the sarcoma cannot be brought into connection with the injury.

I shall first refer to the specimens from the dog. It was a fine setter and was kept in the hospital, not so much with any expectation of saving its life, but with the object of studying myelitis. The back was broken in two places. The dog finally became such a pet that he was allowed to live on until he died. At the autopsy this lymphadenoid sarcoma was found. There is no evidence that it started from a lymph gland, nor are any lymph glands involved.

The second case was that of a boy, eight years of age, who died of peritonitis. The man who struck him was at once arrested. He had been under bail for the previous eight months. The case was one of Dr. Hummel's and was seen in consultation by Dr. Deaver. Laparotomy was performed. I found a large mass in the mesentery and meso-colon. The lymph glands were not involved. There were metastatic deposits in the lungs, pleura and mediastinum. Microscopical examination showed it to be a lymphadenoid sarcoma. In this case I expressed the opinion that the tumor had existed previously and that it was possible that it had been aggravated by the injury. The tumor then broke down, and, the necrotic mass escaping into the peritoneum, peritonitis was produced. *June* 26, 1890.

5. *Epithelioma of the head of a mouse.*

Exhibited by Dr. H. F. Formad.

I have here a mouse with an ulceration on the head which presents all the characteristics of epithelioma. This must have involved the head. Dr. Brooks tells me that the mouse was evidently deaf.

Dr. Ernest Laplace: It would be interesting to have some sections made from this growth to determine whether or not it was really an epithelioma, inasmuch as we have found out that rats and mice can be inoculated with cancer from the human being. If this proves to be an epithelioma and the microscopic appearances are those of epithelioma in the human being, it would be a step in the right direction and indicate that the inoculations should be continued. When with any degree of assurance we are able to inoculate animals with human cancer, that will be a great step toward the elucidation of the etiology of cancer in man.

Dr. H. F. Formad: The discussion of the inoculability of tumors came up at the International Medical Congress, in the Section on Pathology. The relation of bacteria to tumors was also discussed, but no definite conclusions were reached. The majority of pathologists were averse to accepting the idea that cancer and sarcoma were of bacterial origin and consequently to its inoculability from subject to subject. The experiments which have been made in that direction were quite largely commented upon, but were by no means regarded as proving anything. The supposed bacteria found in the cells of sarcoma were proven by high-power immersion lenses to be chromatin fibres of the intra-nuclear network. Several gentlemen, especially the French, exhibited microscopic specimens illustrating this point. Professor Cornil and a gentleman from Montpellier exhibited most beautiful specimens from various tumors stained in the simplest methods with hæmatoxylin. I mention this only because the presence of these chromatin fibres has been mistaken for bacteria in some instances.

Dr. Ernest Laplace: In approaching this matter I do not want to be considered as forcing the question; but because no bacteria are found, that is no reason for saying that they do not exist. Prior to 1882, we knew what tubercular tissues were, but all the time we were looking at the bacilli and never suspected their presence. We only saw granulations and other things. The germs were there, but not until Koch came out and showed that when they were brought in contact with aniline colors they held to these colors better than did other germs, did we

have demonstrated the true cause of tuberculosis. I simply say that because we have not yet found germs characteristic of cancer, that is no proof that they are not there. *September* 25, 1890.

---

6. *Calcareous glandular tumor in an unusual situation.*

Exhibited by Dr. F. P. Henry.

This tumor, about the size of a small orange, may be seen on close inspection to be made up of a mass of lymphatic glands welded together by chronic inflammation. A large part of its external surface is calcareous, and this fibro-calcareous envelope encloses a quantity of inspissated pus. The interest of this tumor is due entirely to its anomalous situation. It was removed from the body of a colored man, æt. about 60 years, who died from asthenia, the result of emphysema complicated with contracted kidneys and dilated heart. There was a small area of fibroid induration in the left pulmonary apex, but otherwise, with the exception of the emphysema, the lungs were healthy. The tumor was situated between the great curvature of the stomach and the pancreas, to both of which it was adherent, and doubtless might have been palpated during life. Had it been detected the diagnosis of carcinoma would probably have been made.

This case recalls to mind another which was in the Jefferson College Hospital more than a year ago, under the care of Dr. J. M. Barton. I saw the case at his request and corroborated the diagnosis of pyloric stenosis. A small, freely movable tumor could be felt in the right hypochondrium, and was supposed by me to be the cause of the pyloric stricture. Lareta's operation for pyloric stenosis was successfully performed by Dr. Barton, and the patient promptly relieved of her dangerous symptoms. The tumor, however, occupied a position posterior to the pylorus and was, if my memory serves me, an enlarged mesenteric or retro-peritoneal gland. The possibility of such anomalies in the situation of glandular tumors should be borne in mind when palpating the abdomen. I have no diagnostic suggestion to make with reference to this tumor, as, unfortunately, it was not detected ante-mortem.

In answer to a question of Dr. Collins as to the possible nature of the specimen (whether tubercular), Dr. Henry stated that no examination was made to determine the presence of tubercle bacilli, but it was searched for the presence of hooklets, under the impression of a possible

hydatid origin, although without success. The formation is probably tubercular, with subsequent caseation and calcification.

*November* 13, 1890.

---

7. *Case of sarcoma of the mediastinum involving the left lung.*

Exhibited by Dr. H. M. Fisher.

Sarah McN., æt. 48 years, married, by occupation a mill hand; was admitted to the Episcopal Hospital under my care November 16, 1890.

About four months before she had begun to be annoyed by cough, hoarseness and dyspnœa and pains at the lower angle of the scapula. She had had no fever and little or no loss of flesh. The cough was laryngeal in character and was not attended by expectoration. Physical examination showed deficient expansion and flatness on percussion over nearly the whole of the left chest, and over all this area the respiratory sounds were very feeble, while tubular breathing was heard at the lower angle of the left scapula. Pulse regular but small. The apex-beat of the heart imperceptible at the nipple, but heart's impulse felt at xiphoid cartilage.

*December* 17. An indurated mass noticed just above the left clavicle. The superficial veins over the left chest and of the left arm enlarged, and left pupil contracted and slight ptosis of the left upper eyelid. Deglutition almost impossible. An effort was made to examine larynx, but it was unsuccessful as patient was unable to open her mouth sufficiently wide to permit the introduction of the mirror, and after the slightest exertion great dyspnœa occurred.

19*th*. Condition getting steadily worse. Great pains on deglutition, and only a very small quantity of milk can be sipped at a time. Died January 7, 1891.

*Autopsy*.—Upon opening the chest a firm nodulated mass was found filling up nearly the whole of the mediastinum and extending from about $2\frac{1}{2}$ inches above the clavicle to the diaphragm. The tumor measured $9 \times 5\frac{1}{2}$ inches and extended from the sternum to the vertebral column. Above the clavicle it had so compressed the left common carotid and jugular that they were reduced in calibre to about one-fifth their normal size.

The growth was firmly adherent to the first three ribs and had pressed the trachea over to the right sterno-clavicular articulation. The heart had been pushed over to the median line of the body and its apex was

beneath the xiphoid cartilage. The right half of the pericardium was of normal thickness, but the left half had been thickened and became firmly adherent to the growth, and presented an irregular, nodulated appearance.

The *heart* itself was small and flabby and showed marked fatty infiltrations, but no nodules. Its valves were normal.

The left *lung* was compressed and infiltrated by the new growth, fully two-thirds of its substance having been encroached upon by a pearly-white tumor, the tissue of which was in some places rather soft and friable, but firm and unyielding at the periphery. Microscopic examination of this mass showed nests of small lymphoid cells, connective-tissue cells, and an irregular fibrous stroma and degenerated bloodvessels, or, in other words, showed that it was a small round-celled sarcoma. The layers of the left pleura were glued together by adhesions, and there was a small encysted accumulation of thick, creamy pus near the base of the thorax posteriorly. The pleura was everywhere much thickened and adherent in several places to the diaphragm, to the lung, and to the above-mentioned growth.

The *liver* showed a soft, nodular, somewhat cheesy nodule near the anterior border of the right lobe.

The *spleen* showed commencing atrophy, and its pulp was almost liquefied.

The *kidneys* each weighed about four ounces, and on the upper anterior border of the right kidney a minute whitish nodule was found. Numerous indurated and enlarged glands were found just beneath the diaphragm.

The *stomach* and upper part of the small intestine showed intense congestion, and the mucous membrane of the duodenum appeared eroded. The pancreas appeared harder than normal, but no circumscribed patches of induration could be detected. *January* 8, 1891.

---

8. *Congenital multiple tumors in a fœtus at eight months.*[1]

Exhibited by Dr. W. R. Wilson.

The specimen is of twofold interest, owing, first, to the variety in the tumor constituents; second, to the relation of the changes in the fœtus to the changes in the ovum as a whole.

[1] Reported as multiple myxomata.

The child is a male, born at from the thirtieth to thirty-second week; vertex presentation. It lived thirty minutes. Weight, 5½ pounds; length, 40 cm. The head was slightly hydrocephalic, measuring 35 cm. in occipito-frontal circumference.

Beneath the right arm, from the axilla to the crest of the ilium, there is an elastic, semifluctuating tumor 18 cm. in length, and increasing the circumference of the thorax at the level of the sixth dorsal vertebra to 38.5 cm. There are similar tumors over the left lumbar region.

On the extensor surfaces of the fingers, toes, arms, and forearms there are tumors more circumscribed and of greater consistence. The whole of the left and upper part of the right thigh are enlarged by hypertrophy of connective tissue, the circumference of the left thigh measuring 17.5 cm. There is red discoloration of the skin of the left thigh.

The mother's history presents nothing abnormal. Menstruation began at fifteen and has always been regular, of the four-weekly type. She has a living child two and one-half years old. She noticed toward the end of the second month an unusual swelling of the abdomen, which increased as her pregnancy advanced. On admission to the hospital her abdomen measured 98 cm. in circumference. The fœtal heart could not

be heard, and it was impossible to outline the fœtus by palpation. There had been no escape of amniotic fluid or blood.

Sections were made from one of the fingers, placenta, cord, and from the left thigh. The sections from the finger show hyperplasia of connective tissue and increase of vessels. The lymph spaces are dilated and lined with proliferated endothelium. There are numerous areas where the connective-tissue fibres are replaced with a homogeneous tissue (myxomatous), beset with indistinct nuclei. There are no branched cells in these areas characteristic of mature myxomatous tissue. This tumor, therefore, presents a condition of elephantiasis with myxomatous change. The latter is not the result of degeneration; on the contrary, it is the result of a process by which the embryonic tissue has been retarded in its development.

The large tumor on the chest, evidently cystic, is either due to a condition of congenital cystic elephantiasis or is a myxoma cytoides. In order to preserve the specimen this tumor was not cut. Sections of the left thigh show elephantiasis. The placenta, macroscopically, is normal in size, thickness, and color. There are no cysts, and the tissue is unusually friable. Microscopically, the placental tissue reveals scattered areas of myxomatous degeneration, involving either a group of several villi or here and there a large villus. The vessels of the affected villi have disappeared and the tissue has become homogeneous, the decidual cells having lost their outline, and being marked here and there by indistinct nuclei.

Beyond the fibrous thickening of the vessel walls near the fœtal surface there is no evidence of inflammatory change; there are no areas of small-celled infiltration denoting a local recent irritation. However, the placenta shows that the nutrition of the fœtus has been interfered with by local changes on the part of the mother, to an extent sufficient to cause the changes in the fœtal tissues, namely, a hyperplasia of embryonic tissue (myxomatous change), and an over-development of connective tissue (elephantiasis). *January* 8, 1891.

---

9. *Case of multiple sarcoma.*

Exhibited by Dr. H. M. Fisher.

K. R., æt. 33; single; child's nurse; born in England; was admitted to the Episcopal Hospital under my care January 6, 1891. For the

following notes of the case I am indebted to the resident physician, Dr. J. P. Tunis:

Family history negative. Patient had an attack of jaundice about two months ago, and for the last four years has been subject to headache and nausea. Three months ago patient noticed a swelling of her abdomen, and vomiting of bilious matter occurred immediately after eating in the morning.

Upon admission she was much emaciated and her abdomen was enlarged, measuring forty-nine inches at the umbilicus. Slight fluctuation upon palpation of the abdominal walls. Apex-beat of the heart immediately under the nipple in the fourth space. Numerous hard subcutaneous nodules found all through the abdominal walls, and several hard lumps in the right axilla.

Patient was very weak, her face had a pinched and anxious expression, and she was very pale. Feet and legs slightly œdematous. No heart murmurs were detected, but there was impairment of percussion resonance under the left clavicle and occasionally dry crepitation over the apex. Owing to the tympanites, the lower margin of the liver was not felt. Spleen apparently of normal size.

The diagnosis made was latent tubercular infiltration of the left lung with tubercular peritonitis, though the absence of very marked tenderness over the abdomen made me a little doubtful as to the correctness of this diagnosis.

Ordered tincture of digitalis, gtt. x every three hours, and whiskey, f℥ss every four hours.

*January* 9. Patient complained of splitting pains in her head. The superficial veins over the right temple were much enlarged. As patient was quite unable to retain any nourishment, her stomach was washed out by syphonage through a soft rubber tube, a quart of lukewarm water with a drachm of sodium bicarb. being used.

After the stomach was washed out she was able to take and retain small quantities of nourishment.

13*th*. Vomited twice to-day after taking milk, and complained of much pain over the region of the liver. Examination showed that the liver extended about three finger-breadths below the costal margin. About this time, finding that very little nourishment could be given by the mouth, nutritive enemata were ordered, prepared according to Leube's formula, with cooked beef, fat, sweetbread, and brandy, and were given twice a day, the rectum being washed out with lukewarm water daily. Most of these she was able to retain.

20*th*. Obstinately constipated, and enemata and glycerin suppositories

occasionally administered. Patient not apparently in much pain, but growing weaker and thinner every day, and has at times mild delirium, from which she can be roused.

A few days later she began to suffer from incontinence of urine, and the skin over the sacrum was much reddened and a small bedsore formed.

31*st*. Patient has for a week or more been steadily failing, and died to-day in a state of profound exhaustion.

No dyspnœa had been noticed during her stay in the hospital.

*Post-mortem examination.*—Emaciation extreme. More than a quart of dark-yellow, ascitic fluid in the abdominal cavity. The pelvic cavity was entirely filled up with a large, hard nodular mass, which proved to be a sarcoma of the left ovary. This mass was as large as a fœtal head at term. The right ovary was about the size of a large walnut, and showed commencing sarcoma. The uterus, of normal size, presented also a small nodule of the same character in its anterior wall. All the mesenteric glands were enlarged, and some were of the size of a walnut. The peritoneum was not infiltrated.

*Liver* weighed one pound and fourteen ounces, and was tightly adherent to the diaphragm and to the posterior abdominal walls. Throughout the entire parenchyma of the organ and upon its upper surface whitish masses of new growth (apparently sarcomatous in nature) were found. Some of the masses were as large as a lemon, and hardly a square inch of non-infiltrated liver tissue remained. The *spleen* showed a nodule of the size of a pullet's egg.

The *kidneys* and the right supra-renal capsule were infiltrated.

The *intestines* showed discrete infiltration with the sarcomatous nodules.

The *lungs*, particularly the left, showed disseminated whitish indurations. And finally, the *heart* showed four or five foci of sarcomatous growth, one in the substance of the left auricle and two or three in that of the left ventricle.

The brain was not examined. *February* 12, 1891.

---

### 10. *The pathology of carcinoma.*

Delivered by Dr. H. Gibbes.

The subject of carcinoma is one of intense interest to the medical profession, both from the deadly havoc it makes in our patients and from

our inability to cope with it when occurring in any site unfavorable for surgical interference. We are at the present time entering what may be termed a new era in the treatment of disease, and it is with the hope that in the near future we may be able to devise some method of treatment by which this dread disease may be arrested in its earlier stages that I bring before you a subject with which you are all so familiar.

To study this disease thoroughly it is necessary to take it in detail, and to do this I will first classify it according to its morbid anatomy, then take its effects locally and secondarily, and finally the functional change produced in the parts and the etiology of the new growth.

Carcinomata may be divided into three classes, if judged by the epithelium from which they are developed and by the structure of the new growths produced; and the epithelium from which carcinomatous neoplasms are derived is, in every case, developed from either the epiblast or hypoblast. The new growths are, therefore, always epithelial in type, and there is a sharp distinction between them and those of mesoblastic origin or connective-tissue type. The minute structure of carcinomata separates them into three groups:

1. Squamous epithelioma.
2. Columnar epithelioma.
3. Glandular carcinoma.

In the squamous epithelioma we have new growths, which are derived from epithelium, the arrangement of which in those parts where new growths most frequently arise is that of stratification; there are many layers of squamous cells, and the function of these cells so arranged is mainly that of protection to the parts lying beneath.

In a squamous epithelioma we find that this stratified epithelium has grown into the cutis vera, at first in large masses, which grow irregularly, but gradually become thinner, until they are composed of only one or two cells in thickness.

We know that a chronic intermittent irritation, such as that of a tight or ill-fitting boot, will cause an increased growth of the epidermis, but this is always outward. We never find that the newly-formed epithelium has penetrated the layer of cement substance that fastens the epidermis on to the corium and grown into the structures below it; there is, then, a vast difference between the hypertrophied epithelium of a corn and an epitheliomatous growth.

But we also know that the dermal appendages, such as hair-follicles, sweat-glands, and parts of the teeth, are developed by a down-growth of epithelium. We have, then, in the formation of an epithelioma of the squamous type, a return to the fœtal condition, in so far that the influ-

ence, whatever it may be, which produces the new growth causes the normal epithelium to increase and grow downward in a similar manner to that which took place in fœtal growth, differing, however, in that the growth is now an abnormal one, endless, erratic, and without a definite object.

The function of normal stratified squamous epithelium is protective and not secretive, and its chemical reaction differs from that of secretive epithelium. This is easily shown by making vertical sections through the base of the tongue of a dog. Some of these will show one of the ducts of the mucous glands, which are numerous in this situation, cut longitudinally.

If one of these sections is now carefully stained with two colors which will not combine, such as rosanilin hydrochloride and iodine-green, the protective or squamous epithelium of the tongue will be found passing into the mouth of the duct for a short distance, and will be sharply differentiated by the green stain from the secreting epithelium, which has taken the red color.

Another point in the normal condition of stratified squamous epithelium is the tendency it has under certain conditions to undergo a horny change, by the transformation of its superficial cells into keratin. This is seen normally in the formation of the nails and the horny papillæ in the tongue of the cat.

We have, therefore, in an epithelioma a down-growth of squamous epithelium in a somewhat similar manner to the down-growth which takes place in fœtal development, and this epithelium has no secretive function, but has a tendency to undergo horny change.

In studying these growths, we find that they may be divided into those that have a large corneous formation and those that have little, and we find further that those with a good deal of horny change have been of slower growth than the others.

The new growth consists of stratified squamous epithelium. This is continuous with the normal epidermis when it has been derived from that source, and the cells forming the ingrowth are found to be stained more deeply on the outside of the mass than those in the centre, the outer cells being directly continuous with those of the rete Malpighii, and having the same reaction. In some parts we find the so-called nests or pearls. These are formed by the outgrowth of a secondary trabecula from the primary, which, in a vertical section of the growth, is cut transversely, giving the concentric arrangement. The outer cells of the nest are the active ones. They stain deeply, and correspond to those of the rete Malpighii in the normal epidermis. In some epitheliomata the

proportion of corneous cells is very large, and they appear as yellow masses in a logwood-stained section.

The next variety is the columnar epithelioma. This starts from parts that normally consist of a single layer of columnar cells on a basement membrane, and the majority of these have a secretive function of a simple kind—that is, the formation of mucus. The pyloric glands of the stomach, Brunner's glands, and similar glands which exist in the neighborhood of the ileo-cæcal valve, are compound tubular glands lined with columnar cells, which appear to have a higher secretive function than those lining simple Lieberkühn follicles. They all, however, have long ducts lined by columnar epithelium, and it is not certain whether columnar epitheliomata arise from the duct or the glandular epithelium when occurring in these parts.

New growths from these cells require a separate class from their structure and development. They are developed normally from an ingrowth of the hypoblast, and with two exceptions are situated in the mucous membrane, Brunner's glands and those near the ileo-cæcal valve being in the submucous coat below the muscularis mucosæ.

A columnar epithelioma consists of a new growth of columnar epithelium originating from that in the Lieberkühn glands or ducts of compound tubular glands, and in the new formation simulates the arrangement of normal columnar epithelium—that is to say, the new growth is composed of tubes lined by columnar cells, but this tubular arrangement is very irregular. The epithelium is always on a basement membrane, and there is always a lumen to the tube, however irregularly it may be formed.

The new growth is always outward from the lumen of the part in which it starts. As in development the glands are formed by a dipping downward of the epithelium, so in the formation of these new growths there is an exaggeration of the fœtal condition.

There is, therefore, sufficient difference in these forms to make a distinct class.

The next variety is the glandular carcinoma. It is derived from epithelium in which the secretive function is at its highest development. These cells take from the blood, which is brought by capillary vessels into close proximity to them for that purpose, what materials they require, and by virtue of their protoplasm elaborate a substance which is the secretion of the gland of which they are the functional elements. They are situated on a basement membrane in single rows, and they pour their secretion into the lumen of the gland the acini of which they line.

This description does not apply to the liver, but is it certain that primary carcinoma is ever developed in that organ, except from the bile-ducts?

The minute structure of all glandular carcinomata is the same, and differs from the two forms already described in having a fibrous stroma forming a network, the interstices of which are filled with masses of cells, continuous throughout.

These glandular carcinomata are formed by germination of pre-existing gland-cells, the increase being toward the lumen and not outward, as in the other forms.

There are two kinds of glandular carcinomata—one soft, the other hard. Their structure is the same, but one is of rapid growth, and contains a large amount of cells and little stroma, while the other is of slow growth, and contains a large amount of fibrous stroma with comparatively few cells.

For the purpose of investigating the structure of these growths, the mammary gland is the most suitable part, from the frequency with which the disease occurs there, and from the ease with which the parts can be obtained in a perfectly fresh condition, after operation.

When microscopic examination of a number of these cases is made, it is at once apparent that a great difference exists between them, no two being exactly alike.

The type on which they are formed is, however, always the same; as new cells are developed by the germination of the normal cells, under an abnormal stimulus, the same influence is extended to the connective tissue forming the framework of the gland, and this throws off fine processes which grow between the newly formed cells and form the fibrous network. These fine trabeculæ consist, in the first place, of a capillary bloodvessel, with a small amount of fibrous tissue surrounding it, so that from the first the newly formed cancer-cells are separated from the bloodvessels by a varying amount of fibrous connective tissue—that is to say, the naked capillary vessel is never in absolute contact with the neoplastic cells, as is the case in a sarcoma or mesoblastic neoplasm. This is an important point, as it affords a criterion for the differential diagnosis between sarcoma and carcinoma, and also explains the difference existing in the formation of secondary growths in these two neoplasms.

Encephaloid cancer is a rare form in the mammary gland, and, in fact, everywhere. Formerly it was considered to be common, but extended and more scientific observation has shown that most of the so-called encephaloids were really large round-celled sarcomata.

We have, therefore, judging by the morbid anatomy, three forms of carcinomata, which are entirely distinct from one another:

One, formed of squamous epithelium, which is avascular, and is nourished by the lymph in the same manner as the normal epithelium from which it springs.

Another, composed of columnar cells, arranged on a basement membrane, mimicking the normal arrangement of the cells from which it is derived.

And the third, composed of masses of cells, with a network of fibrous tissue running through them and carrying bloodvessels for their nourishment.

The first two follow the type of fœtal development in their growth, the last does not.

I will now consider the method of growth locally, and the manner in which secondary growths are produced. As I have already said, epithelioma is simply a downward growth of stratified squamous epithelium. But when we examine a large number of these new growths, we find that among many minor differences there is one which is so marked as to constitute an essential characteristic in the morbid histology—that is, the amount of horny change.

A number of these growths will be found in which the corneous change is very marked, which is shown by the round or oval masses, looking yellow in a logwood-stained section; the cells composing them appear to be dried up and to have lost their vitality. Around these masses, but generally separated from them by a small space, are a number of cells of epithelial type, which react to logwood in a normal manner.

Other growths show this horny change only in a slight degree; they contain no horny masses, and only a few of the central cells in a trabecula show evidences of keratoid change. Clinically, these two forms can generally be differentiated by the length of time they have taken to grow.

Their mode of growth, when once started, is, however, the same in every case.

If we take a few examples of those epitheliomata in which the corneous change is well marked, we shall find some interesting facts.

We will take three cases, which differ widely. First, a typical soot cancer, or epithelioma of the scrotum, occurring in a chimney-sweep, which was of slow growth. These cases are now rare, as the demand for soot as a fertilizer is much less than it was formerly, and chimneys are swept by machinery. We must consider that the irritation caused by the soot was in these cases the starting-point of the new growth. We find,

on examining a case of slow growth, that throughout it are large, yellow masses of altered epithelial cells, while round these, but sharply defined from them by their reaction to the logwood stain, are a number of cells of epithelial type, and from these are processes, formed of similar cells, running in every direction, but gradually becoming smaller, until they consist of only one or two cells.

Next we will take a growth showing that it originates, in the first place, from an injury.

In this case, twenty years before the case came under observation, a slight injury to the back of the hand resulted in a dry, horny growth. After a time this was removed, and was succeeded by a number of smaller horny growths, the whole only covering a space of about three-quarters of an inch in diameter. This remained for a number of years, until muriatic acid was freely applied, with the result that the growth rapidly increased, until nearly the whole of the back of the hand was involved, necessitating its removal by amputation. This growth showed on microscopical examination the same appearances as those described in the case of soot cancer.

Another case differed from these two in that there was no history of any exciting cause.

A woman, æt. 60 years, stated that a growth of a hard, warty nature had existed in the inguinal region ever since she was a young girl. She was positive that there had been no treatment of any kind. Shortly before she came under observation she noticed that the inguinal growth had become much larger, and was increasing rapidly. At the same time she found that a tumor was forming in the labia, and was also rapidly growing. Both of these were removed. The first showed the horny formation already described; the second consisted entirely of squamous epithelium, growing in the irregular manner usually found in an epithelioma which is rapidly increasing. There were no horny masses in it, but here and there a few cells could be found which had undergone a horny change in a slight degree. Whether this pudendal growth was secondary to that in the groin is not clear, but from several small blood-vessels ending abruptly in masses of epithelial cells, it would seem that the infection had been carried by the circulation.

In studying these varied cases, it becomes evident that an increased growth of epithelium, which undergoes a horny change, may take place and exist for years without being in any way an epithelioma, and this is proved by other cases which I have examined when a long-standing growth was removed, which, on microscopical examination, proved to be entirely composed of horny epithelium, with no trace of cancerous forma-

tion. On the other hand, these corneous epithelial formations seem to have the power of setting up cancerous growth when a direct stimulus is applied, as in the case of muriatic acid; or when they have existed for many years, the same change may take place from causes of which we are unable to find any evidence.

An interesting point in the formation of these cancerous conditions from horny epithelial growths is that, although the cells of which they are formed seem to be effete and to have lost their vitality, they must in reality possess powers of germination, as they exist in the cutis vera far from any epithelial cells, and the new growth is seen to be derived directly from them.

Epitheliomata which arise on the hands or arms of tar- or paraffine-workers, or in the tongue from the irritation of hot tobacco-smoke, do not, as a rule, show these horny masses, but the central cells show evidences of having undergone more or less keratoid change. When, however, an epithelioma has arisen from the oral mucous membrane, the cells of which it is composed are large, and resemble those found normally in that position, and they retain these characteristics throughout the growth.

Whatever differences may exist in the formation of the primary growths, the production of secondary growths is always brought about in the same manner, commonly by the lymphatics, rarely by the blood-vessels. As these growths send processes into the depths of the tissue, these gradually become smaller, and, naturally following the line of least resistance, work their way into the lymphatic spaces, when they finally become reduced to a line of single cells. One of these easily becomes detached, and is carried away by the lymph-stream. These down-growths, however, grow slowly, and secondary infection is long in taking place.

*The Columnar Epitheliomata.*—The growth is an outward one from the lumen, and there is no proper stroma formed, the new growth pushing its way among the existing tissue, but always retaining the same formation—columnar cells on a basement membrane. When a growth of this kind occurs at the pylorus, the whole mass of non-striped muscle forming the sphincter becomes permeated by it. In the liver these growths start from the epithelium of the bile-ducts. In some cases irregular growths of this kind are found, which closely resemble the dilatation of the bile-ducts produced by psorospermiæ in the liver of rabbits. It is possible that some of the cases which are considered to be columnar epitheliomata may be produced in a similar manner.

The method by which secondary growths are produced from these

columnar epitheliomata is not clear, and so far I have been unable to get any satisfactory evidence of the route taken by the infecting material.

*The Glandular Carcinomata.*—The action of the stimulus which causes germination of the secreting epithelium also causes a growth of fibrous tissue, and in this way the network is formed with the cells in the interstices and the bloodvessels in the fibrous trabecula, the normal condition of the gland being entirely altered. This is the usual course in a scirrhous carcinoma. There are, however, rare forms occurring in the mammary gland when each acinus becomes filled with newly formed cells, derived by germination from the normal cells, but without any fibrous stroma running between them. This is, however, I think, only an early condition, as in some cases this arrangement can be found in one part, while another near by may contain a typical scirrhus. One thing, however, that is worthy of notice, is that the epithelium of the ducts remains intact among the cancer-cells, and shows that its reaction is different by the way it takes the logwood stain. The method by which these glandular alveolar carcinomata are reproduced as secondary growths in the nearest lymphatic glands is a very interesting one. As is well known, secondary growths in the nearest lymphatic glands occur early in the course of the disease, and this is a natural consequence from the formation of the growth itself. The cells are in masses, in direct contact with the stroma, and the bloodvessels are situated in the stroma, and separated by it from the cells. Therefore it is a difficult matter for a cancer-cell to get into a bloodvessel. Consequently dissemination by the blood-stream is not the manner in which secondary growths are produced. If they were, they would occur late in the course of the disease, as is shown in sarcomata, where, although the bloodvessels are in direct contact with the cells of the new growth, dissemination throughout the body does not occur in the earlier stage, but when it does is very general.

Secondary growths in glandular carcinomata are produced by the passage of cancer-cells from the primary neoplasm, through the lymphatic channels in its stroma, to the lymph-vessels of the affected gland, and through them to the nearest compound lymphatic glands.

I base this statement on a careful examination of five cases, where the mammary gland was removed in the earliest stage of the disease—that is, within a few days of its first discovery by the patient—and where the whole mammary gland, together with the pectoral and axillary glands, were removed without their connection being separated.

The method adopted in each case was this: All the parts removed were placed at once after operation in Müller's fluid, and brought to my

laboratory. They were then carefully dissected out, and each part placed in a separate bottle and labelled. After they were properly hardened, sections were made of each part and examined separately. The results were carefully noted in each case, and then the five cases were compared.

The facts established were these: In the first place, the stroma formed in a glandular carcinoma is composed of fibrous connective tissue, and the elements of this are arranged in a similar manner to that of normal tissue—that is, in a more or less felted manner—whereby spaces are left between the fibrils, which are filled with lymph and are parts of the lymph-canal system of the body. Now these lymph-spaces are directly in contact with the masses of cancer-cells. Consequently it is an easy matter for one or two cells to separate themselves from the parent mass and enter a lymph-space, as they probably possess more or less amœboid movement. And that they do this is very plain, as numbers of these lymph-spaces can be seen containing one or two cancer cells. The current in the lymphatic system is always from the periphery toward the centre, and there exists, therefore, a *vis à fronte* sufficient to draw these cells onward, directly they have entered the lymph-channels. As soon as these channels are passed and a formed lymphatic vessel entered, the valves, always existing there, prevent the possibility of any return, and also insure an onward progress.

The lymph-vessels themselves are so small and of such delicate structure that I have been unable so far to demonstrate the presence of cancer-cells in their course; but, taking their termination in the capsule of the compound lymphatic gland, it is an easy matter to show them filling the lumen of the vessel, and passing along the lymph-paths of the gland itself. Their chemical reaction is so different from normal lymph-cells that my logwood stain picks them out at once. I think from these observations, which have been carefully carried out, I am justified in saying that the primary cells of a glandular carcinoma occurring in the mammary gland do pass through the lymphatics to the nearest compound lymphatics, where we know secondary growths are most commonly found.

I also consider that this takes place in a very early stage of the disease, as in these five cases, taken as early as possible after the morbid process had declared itself, there was not one in which the highest axillary gland—that is, the one situated furthest from the primary growth—was not affected with the disease. This seems to be a most significant fact, and early operation would appear to be imperative. The after-history of these cases shows that sometimes the disease is entirely eradicated, while in others it is not. I think the explanation of this must be that

in these cases the cancer-cells take a somewhat different course to that generally followed, through the pectoral and axillary glands, and either pass through the sternal glands, along the line of the internal mammary bloodvessels, or they must pass entirely through the chain of axillary glands to the subclavian vein or thoracic duct.

It is, however, certain, that in the majority of cases the disease is confined in its earliest stages to the primary growth in the gland itself, and the secondary in the pectoral and axillary glands. There is, however, no reason why a cancer-cell cannot travel the whole range of these glands and get into the blood, provided the change produced by the secondary growth has not involved and altered the whole of the normal structure of the gland. When this is done, the whole gland is changed into cancerous tissue, all afferent and efferent vessels are obliterated, and the growth itself is confined by the dilated capsule of the original normal gland.

The next point to consider is the change that takes place in one of these compound lymphatic glands when invaded by cancer-cells. It is necessary to remember the normal structure of the glands in question. They have a fibrous capsule, into which the afferent vessels open, and through channels in it pass the lymph into the sinuses in the gland itself. These are occupied by a coarse adenoid tissue, and the follicular masses containing the lymph-capsules are separated from them by a fenestrated membrane. We have, then, an organ the constituents of which are all, so far as we know, of mesoblastic origin, and which is permeated by sinuses arranged to carry the lymph brought by the afferent vessels through these sinuses, enrich it in its passage with numbers of ripe lymph-capsules, and discharge it at the hilus into the efferent vessel. There is one point in connection with the histology of these glands on which embryologists have not yet enlightened us. I mean as to the origin of the large flat epithelioid cells which lie on the nodes of the adenoid reticulum. These cells are epithelioid in character, and if their origin should be found to be epithelial, it would help to clear up some obscure points in morbid histology. When the cancer-cells carried from the primary growth enter the sinuses of the lymphatic gland, they pass along for some distance, but soon get fixed in the meshes of the coarse adenoid tissue. As soon as they become stationary they begin to develop a secondary formation, the protoplasm increases, and the nucleus divides, until a large multinucleated mass of protoplasm is formed. Differential staining at this stage shows some peculiarities in the chemical reactions of these cells and in their structure. Using red and green aniline colors, which will not combine, these large multinucleated masses of proto-

plasm take the red stain deeply, and examination with high powers shows no structure in the majority of the nuclei. One or two, however, in the mass will be found that have taken the green color. They are situated at the edge of the mass, and their nuclei show well-marked convolutions; the protoplasm also surrounding them is seen to be separating from the mass. On examining the structures lying between these multinucleated masses, a number of large single cells are found, containing large nuclei, with well-marked networks in them, and they have all taken the green color. Further careful examination will also show some of these cells in which the reaction is changing again to the red and the nucleus is becoming opaque. The explanation of this seems to me to be that a cancer-cell deposited in a lymphatic gland is in the active stage; the protoplasm increases, the nucleus divides, and finally there separate from the mass individual cells, which then pass into the resting-stage for a time, and their reaction to staining agents shows that their chemical composition varies in these different stages. I have found precisely similar changes in secondary growths in the liver and other parts. These peculiarities in the germination and in the chemical reactions at different stages are of interest, and tend to show that these abnormal cells still retain normal qualities.

There is an interesting point in connection with secondary growths from squamous epitheliomata occurring in the portio vaginalis. Some authorities consider that a carcinoma in this situation does not produce secondary growths in the uterus, but in the vagina. I have recently examined two cases which disprove this. Curettings were made on account of persistent hemorrhage, and on examining them I found a hypertrophic condition of the mucous membrane. In each case the curettings were from the fundus. Judging only from the appearances presented by the mucous membrane, these were cases of so-called adenoma of the uterine glands, but on careful examination of the deepest parts removed, I found squamous epitheliomatous cells in the blood sinuses. These cells had been carried backward toward the fundus, had then grown toward the surface, and the irritation set up by their growth had caused hypertrophy of the mucous membrane—the so-called adenoma. Death occurred in each case some months afterward, and this condition was verified. It seems to me that some of the villous growths in the bladder may be explained in the same way, although in a large number examined by me that were removed during life by Sir Henry Thompson, I was unable to find any evidences of carcinoma; but, considering the great length of villous growths in this situation, the cancerous tissue may not have been reached.

The next consideration is the causation of these cancerous growths.

I have already shown that in the secondary formations arising from these, the epithelium of which they are formed is always of the same kind as that existing in the part where the primary growth first begins.

That is, a neoplasm starting from squamous epithelium is formed entirely of squamous epithelium. Another, starting from glandular epithelium, is always formed of epithelium resembling that found in secreting glands. A squamous epithelioma does not in any case contain columnar or glandular cells. We know that the normal cells are formed from cells in either the epiblast or hypoblast, and we cannot distinguish between these cells in their embryonic condition; but as they develop and form the different adult conditions, some become squamous with a protective function, others glandular with a secretive function. Judging from the results produced by abnormal action on these adult cells, producing a neoplastic growth from them, we may consider that in their adult normal condition they have reached the highest point in development for which they were destined; as we never find, when an abnormal stimulus is applied to them, causing them to take an abnormal growth, that they pass into a higher stage, no squamous cells ever becoming glandular. This is an important consideration, as it shows that, whatever the cause may be which brings about the cancerous change in epithelial cells, its action is merely to cause increased growth in them. That it may, however, have an important effect on glandular epithelium as regards its function is highly probable; for, unless we consider that the cancerous influence has affected the secretive function of glandular cells in such a manner that they produce in their abnormal condition something deleterious to the person affected, we cannot explain the marked cachexia produced in many cases.

In studying the etiology we have, therefore, a condition where some unknown influence acts on certain cells and causes them to grow, slowly in some cases, rapidly in others, and in those cells having a secretive function this is probably altered.

There is, however, a further consideration. Each cell formed under this abnormal influence is endowed with the property of increasing by division, wherever it may be carried, at the expense of the tissues in the part where its course is arrested; and more than this, it carries with it the power of producing changes in the cells formed by its germination, which may be either normal or abnormal. This is shown in the keratoid change set up in single cells in the secondary growths in squamous epithelioma, and in the colloid change of the cells in columnar epitheliomata, where the primary growth was subject to that degeneration.

Various theories have been advanced to account for the growth of neoplasms. Among these Cohnheim's embryonic remains was at one time thought to explain matters, but further investigation showed that it was based, in the first instance, on an abnormal condition, and was untenable.

The doctrine of altered physiological resistance also met with some favor, but a thorough knowledge of the histological conditions and the primary changes set up in them by cancerous growth deprives this theory of any basis.

The latest view is that advanced by Dr. Russel, of Edinburgh, who describes a characteristic organism of cancer. He here makes two assumptions, which he does not prove—first, that it is an organism; second, that it is characteristic of cancer. Both these assumptions have already been abundantly disproved. The so-called organism exists in large numbers in every case of syphilitic warty growth that I have examined, and it consists of what look like broken-down nuclei which have no resemblance to any organism, vegetable or animal.

There are some workers who are now investigating this disease with the confident hope of proving its bacterial origin. Now, I would ask, does it seem probable that any organism could have the power of exciting new growth in cells of such varying character, yet which in each case retains its individuality, and further transmits to all the new cells formed in its growth certain peculiarities, and in some cases morbid changes, as in the colloid degeneration of columnar epithelioma?

Are we to understand that the action of an organism on the original cells from which the growth first springs can be of so potent a character that it can impart to these cells peculiarities which they are then able to transmit to all the numbers of cells formed afterward from their germination? This does not seem possible, and, if it were the case, we must imagine a different organism acting in each of the varieties of carcinomata.

Numerous experiments have been made for the purpose of testing the possibility of communicating the disease from the human subject to healthy animals, and they have all proved futile; but there are experiments on record which would seem to prove that it is possible to transplant a portion of cancerous material from one part of an affected patient to another part of the same patient without destroying its power of growth.

Does not this show that these cells have in themselves no inherent power of increase, but that there must be a peculiar condition of their environment by which they are enabled to live and grow? In epitheli-

oma of the skin, it is easy to find cases where the newly formed epithelium has grown in the cutis vera a long distance from its starting-point. In many instances it can be shown to have grown almost into contact with the normal epidermis over it, but this is not in any way affected by the proximity of the new growth. So that the influence, whatever it is, acted at one point only, and affected the cells there, giving them the power of infecting their descendants, but not other normal cells.

This would seem to prove that only certain cells of any particular kind are liable to be influenced by the conditions which cause cancerous growth. This view is further corroborated by the fact that in the mammary gland a large portion may be entirely changed by fibrous degeneration, while some portions involved in this degenerative process may be changed into cancer tissue, yet other parts do not show this change.

Some authorities have advanced a theory that cancer-cells can exert what they call spermatic influence on normal cells of any kind, transforming them into cancer-cells. If this were the case, the secondary growths in their earliest stages, in such organs as the liver or lymphatic glands, would show the process going on. I have made an extensive investigation into this, and feel confident that the only effect the growth of alien cells has on those of the invaded organ is one of destruction. The normal cells can be seen in every stage of disintegration before the invading growth.

That carcinoma is the local manifestation of a constitutional disease seems to me highly improbable from the manner in which it invariably makes its first appearance in a single organ. The cases recorded of multiple primary carcinoma are very vague in detail, and we must remember that we have no knowledge of how soon cells from the primary growth pass on and establish secondary infection. From cases I have observed it must occur sometimes at a very early stage. From the large percentage of cases in which heredity has been proved, it seems to me that we must admit an inherited cancerous tendency in certain cells of the body in some individuals, which may be brought into activity by injury or prolonged irritation, or in other cases is excited into action when an organ passes into a condition of senile inactivity. What this inherited tendency is or from what it is derived is impossible to determine, but when we consider the direct transmission of syphilis from parent to child, and the knowledge that we possess of epidemics of this disease existing all over the known world in former ages, it is quite within the limits of possibility that a taint should have been trans-

mitted, which, in its attenuated condition at the present day, might manifest itself in abnormal growth, which after all is what carcinoma really is. Leaving this point for elucidation to those minds having a propensity for abstruse questions, we have to face the fact that to arrest this disease we cannot hope to act on its hereditary nature, but on its local development. We have, therefore, before us the problem that in the three forms of carcinomata are developed three different kinds of neoplasm, and that to arrest them the treatment cannot probably be the same in each case, but the principle, it seems to me, on which we must act, is the same. We must find some substance that when introduced into the system will arrest this abnormal cell-growth, either by interfering with the local cause setting it up, or by so acting on these cells as to prevent their further increase.

There is one point in connection with nerve-trunks and nerve-endings which exist in proximity to squamous epitheliomatous growths, but which are not involved in them, that I have never seen noticed—that is, the change produced in them by a fibrous growth. This is shown by the increased thickness of the perineurium, by a fibrous change in the endoneurium which has destroyed a number of the nerve-fibres, and by a well-marked change in the capsules of Pacinian corpuscles. They have become very much thickened and contracted, giving a peculiar corrugated appearance to these nerve-endings. These changes occur in nerve structures at some little distance from the neoplasm, but whether this change is brought about by the growth or has any connection with its formation I am unable to say. It is, however, so far as I know, peculiar to squamous epithelioma, as I have often found nerve-trunks passing through glandular carcinoma with their individual nerve-fibres unaltered, and in cancer of the mammary gland I have found perfectly normal Pacinian corpuscles. It may be that an epithelioma has the power to affect a nerve-trunk not directly involved in its growth, or it may be that a primary change in the nerve-trunk may affect the part it controls. This is an interesting problem, which may have some bearing on these neoplasms.

Whatever may be the causation, it seems to me that we have to arrest growth in cells, which by their histological appearance and chemical reaction are acting precisely in the same manner as normal cells undergoing germination, but under the influence of an abnormal stimulus.

And I have thought that any substance which would arrest development of normal tissues when introduced into the system ought to act in a similar manner on these cells developing in an abnormal condition.

I have been experimenting in this direction for some time, and have obtained results which give me some hope of ultimate success.

*April* 23, 1891.

---

11. *Myxomatous tumor of the abdominal wall.*

Exhibited by Dr. F. Hinkle.

This was a large tumor of the right abdominal wall in the iliac region, and a smaller one of the same nature apparently was situated in the Scarpa's triangle of the right thigh. The former of these tumors weighed about fifteen pounds, and contained sacs full of a gelatinous material. The patient from whom the tumor was taken was a woman, the mother of twelve children, who had always been in good health generally. The growth started from the right inguinal region as a small movable tumor, about ten years ago, at first small and painless and at that time regarded as a hernia. Both tumors grew slowly, at first producing no consequences, but latterly from pressure the limb became very œdematous and finally immovable, and the last three children were born dead and were delivered by instrumental means. The last child was born in July of 1888, and the tumor was removed in February of 1889. The abdominal walls were so stretched that during the operation the intestines pressed forward between the recti muscles, but were reduced. Later, the operation was resumed and the tumor removed. The growth was made up of a number of sacs of a bright golden color, shining and transparent, containing a gelatinous substance freely flowing. At the site of the tumor the abdominal walls were practically destroyed, absorbed, and when in the operation the caput coli was approached it was found to be separated from the exterior practically only by the peritoneum. The patient made an excellent recovery in fifteen days and has been quite well until the last six months, since which period there is apparently another formation growing within the abdominal cavity. *June* 25, 1891.

12. *Fibro-lipoma of the nuchal region.*

Exhibited by Dr. F. Hinkle.

The patient from whom this enormous tumor was removed is a stone-mason, æt. 57 years. Ten years ago, while working in the Columbia rolling mill he received a severe burn on the back of the neck, which apparently healed, however, without any difficulty and without the promise of any serious consequences. About six months afterward, he noticed that there was a small, painless and movable lump under the skin at the seat of the former injury. In the course of time this continued to grow, remaining painless and movable, however, until at the end of the ten years it reached the large size which it now presents. Taking its origin along the trapezius ridge, it extended to the fourth dorsal vertebra; on the right side it extended anteriorly to the sterno-cleido-mastoid muscle and posteriorly it overlapped the spines of the vertebræ. When removed it was found to weigh ten pounds.

Under the advice of some friend he had, some weeks before consulting the exhibitor, poulticed the tumor almost constantly for seven weeks in order "to draw out the core," and as a result of this heroic poulticing this large opening in the skin over the growth was developed, and was suppurating freely when the case came in hand. The mass was removed by an elliptical incision and careful dissection. To all appearances it is of the nature of a fibro-lipoma, is firm but elastic to the touch, was clearly circumscribed in its occurrence, and seems to be made up of islets of a fatty nature held in a fibrous matrix of more or less density. *June* 25, 1891.

## IX. MISCELLANEOUS.

### 1. *Tubular epithelioma.*

Exhibited by Dr. H. F. Formad.

A peculiar case of this rare form of neoplasm came under my observation in one of my weekly autopsy-demonstrations. The case came from the surgical wards of the Philadelphia Hospital, in charge of Dr. William G. Porter, and my attention was directed to it by Dr. Benjamin Brooke, resident physician, who properly diagnosticated the case and furnished me the following history:

P. A., colored, æt. 24, laborer. Family and previous history negative. In 1884, he noticed a small, deep-seated tumor occupying the median line of the neck, just below the chin; skin intact and freely movable over the tumor. It gave him no trouble for several years, and increased in size very slowly, until 1887, when it began to grow rapidly, and finally began to ulcerate.

When he entered the hospital in July, 1888, the tumor was about the size of a hen's egg, suppurating freely; discharge very offensive. It had evidently developed in the sub-lingual gland, and had extended to the left sub-maxillary glands, and to the tissues of the neck. In October, 1888, it was removed by free and extensive incisions, together with the glands on the left side of the neck. The wound never healed, and the neoplasm progressively increased in size.

In September, 1889, his condition was as follows: The tumor formation had involved the whole sub-maxillary region and had extended peripherally to the left side of the face. It appeared like a large granulating ulcer with protruding, fungoid vegetations, the edges of the wound being raised and infiltrated, and the tissues of the neck swollen and nodulated. The neoplasm had evidently extended to the œsophagus and the larynx, because the patient began to suffer from dysphagia and dyspnœa, which continued until he died, October 20, 1889.

For some time before death he had several severe hemorrhages from the throat, and obstinate diarrhœa. Pain was not a conspicuous symptom, except shortly before death, when at times it would be severe, and

again, entirely absent. Appetite was always good until a few days before death, which, for a day or two, was preceded by delirium.

Tubular epithelioma of the nasal glands, × 300. The tumor now under consideration is of identical structure with the above: connective-tissue stroma forming spaces filled with masses of small squamous, epithelial cells which form a few distinct, small pearly bodies. (Formad and Blackburn.)

*Autopsy.*—Body well nourished. Nothing peculiar externally except the tumor of his neck as described above. The growth proved to have originated in the sub-lingual gland, extending to the sub-maxillary and parotid glands. It involved all the structures at the base of the tongue, extending around the larynx and pharynx to the soft palate, upward to the base of the skull, and penetrated the sphenoidal cells. It followed the œsophagus downward, infiltrating its serous coat, the posterior mediastinal space, and extended all over the upper surface of the diaphragm. The growth presented a continuous chain of flat, nodular masses from the pharynx to the diaphragm as stated. Another extension was throughout the serous surfaces of the pleural cavity, without affecting the deeper structures beneath. The tumor formation was most

marked in the apices of the pleural cavities, being more prominent in the right, and thence the flat, nodulated masses gradually blended off, in the form of smaller nodes, over the serous surfaces of the pulmonary and costal pleura.

The parenchyma of the lungs and of the heart were not involved. The pericardium was free. Neither the bones, nor any other of the deeper structures were involved.

The lymph-glands were peculiarly free from the tumor infiltration, none being involved, and only some hyperplasia of one or two of the bronchial glands was noticed.

Below the diaphragm there was no tumor formation whatever. The under surface of the diaphragm was normal, as were all of the abdominal organs.

The neoplasm was white in color, juicy, and more or less firm in consistency.

I have had the opportunity of studying two other cases of true epithelioma of the salivary gland, and one of the nasal glands (see figure), which, histologically, were identical with the neoplasm just described, but which did not show any tendency to generalization. They appeared like the common mixed tumors of the parotid—more or less circumscribed nodular masses with but limited peripheral infiltration. Yet, even in the present case, we have extension of the neoplasm by continuity and contiguity of structure rather than by metastasis, as seen from the mode of spreading given above. There was no generalization by means of the blood or lymphatic vessels, the latter not having been entered by the tumor elements, and not having carried them, as the non-involvement of the lymph-glands and of the parenchyma of the organs shows. In true metastasis, either the blood or the lymph conveys the elements for secondary tumor deposits.

In the present case, the spread of the neoplasm occurred by direct continuity of structure, and evidently by means of the lymph spaces (juice-channels of Recklinghausen), or the peri-vascular and peri-lymphatic spaces, which I consider distinct from metastasis of the lymphatics proper.

I have found pearly bodies to be a characteristic feature of these new growths. True to their epiblastic origin the epithelial elements of the salivary glands appear to limit themselves to local tissue invasion, differing histologically from the cancers of the hypoblastic glands in forming pearly bodies throughout the growth, precisely as do the epitheliomata of the epidermis. The only difference is, that while the pearly bodies of the latter may be very large, those of cancers of the

epiblastic racemose glands (like the salivary) are very small. (See figure.) Except for the presence of pearly bodies these neoplasms have the histological appearance of ordinary glandular carcinomata.

I have adopted for this class of cancers the term *tubular epithelioma*, a name employed by Cornil and Ranvier for a certain neoplasm of somewhat indefinite nature, and one without pearly bodies.

*December* 12, 1889.

---

2. *Congenitally atrophic eye; calcification of vitreous portion.*

Exhibited by Dr. A. J. Smith.

Through the kindness of Dr. Wallace of this city I am permitted to call the attention of the Society to this specimen, an eye void of function since birth, and very much smaller than its fellow. It was removed for the sake of appearances alone, having produced no actual discomfort. Opening the eye, it was found that the posterior chamber was occupied by a small calcified mass, much the shape of a composite flower, the stem of the flower directed posteriorly and into the beginning of the optic nerve, the rays of the flower extending out to the choroid anteriorly, attached to the latter at the ciliary processes. The central part of the anterior aspect of this calcified mass was concave from contact with convexity of the lens. The choroid was apparently normal, but under the microscope it is seen to be thrown into a great mass of convolutions, an exaggeration of the normal ciliary arrangement of the choroid, and looks much like a pigmented papilloma from the arborescent appearance. This is, however, produced only as a result of puckering of the membrane, probably following the shrinkage of the ball.

*December* 12, 1889.

---

3. *Abscess of abdominal wall.*

Exhibited by Dr. W. L. Coplin.

These specimens are from a colored woman, æt. 32 years, with large fibroid tumor of the uterus. Some six weeks before her death there appeared an abscess in the abdominal wall just above and to the left of the umbilicus. This opened spontaneously. A diagnosis of suppurating fibroid was made. The abscess was treated by washing out; the cavity

was washed out as usual on Tuesday. In the course of twenty minutes the woman complained of feeling queer, and in ten or fifteen minutes was dead.

The *autopsy* showed that the abscess had communicated with the transverse colon. A fecal mass in the colon probably produced inflammation and passed into the abdominal wall, causing an abscess, and the pus has passed through the muscular fibres to the surface, while the opening in the colon has cicatrized. A second abscess cavity filled with pus was also found. There was a large fibroid tumor in Douglas's cul-de-sac back of the vagina. This was so adherent that it could not have been removed.

The *heart* was found to be excessively pale, and the right side much dilated.

In the pulmonary artery there was on the margins a white clot, and inside a very dark clot. The origin of this must have been in this fibroid, where there are large sluice-ways carrying blood in which thrombi are liable to form. There are some hemorrhagic infarcts in the lungs of an older date.

Dr. J. M. Baldy: The etiology of this abscess of the abdominal wall is of interest. I do not think that it can be successfully contended that the abscess was caused by an opening in the intestinal wall, although it is possible that infection may have taken place through a thin intestinal wall. Intra-mural abscess of that kind, without some such cause as adherent intestine, is rather rare. This is the first one of non-traumatic origin that I have ever seen. *February* 27, 1890.

---

### 4. *Ulceration of stomach of python.*

Exhibited by Dr. J. L. Hatch.

For the few facts in the clinical history of the case under our consideration I am indebted to Mr. Brown, the superintendent of the Zoölogical Garden of this city.

About twelve months or so ago he noticed that the mucous membrane of the mouth showed foci of inflammation; these centres soon spread in a radiating manner and attacked the gums around the teeth, where the inflammatory process was followed by caseous degeneration. There was also an excessive secretion of mucus, which the snake would blow sometimes from the mouth, then again from the nasal cavities; mucus was

also passed *per anum*. There was marked anorexia, even during the season when the python feeds best.

The snake was otherwise in good condition up to the time of death, and no other symptoms could be elicited. I have since seen the consort of the python that died, and it is evidently suffering from the same malady, if any reliance is to be placed upon the inflammatory process in the mouth as indicating a further ulcerative condition of the stomach.

How long this process is under way before it manifests itself thus it is hard to say, but all pythons that die in captivity, and all boas, if they live long enough before they die, are found to have this condition of the stomach.

The python I examined was probably over 100 years old. Reptiles grow very slowly, and those of this species reach an enormous size. There are reports of pythons 30 feet long, and Pliny tells us that a python 120 feet long was killed on the shore of the river Bagrada by the soldiers in the army of Regulus during the Punic war. This was probably a species of the sub-family *Pythonicus holodontes*, and if 100 feet were taken off from the figures given, a nearer approach to its exact length would be reached.

The largest snake, I think, we have any authentic record of was one sent to this country from Holland a few years ago, and measured a few inches over eighteen feet. A python eleven feet in length grows so slowly that in a period of two years from the time of measurement an increase in length is not perceptible. It takes an alligator from seventy-five to one hundred years to reach its full size and complete development, and as the rate of growth in the two animals is comparable, it certainly will take as long, if not longer, for a python to reach complete development as it does an alligator.

Some of the other colubers are prone to this affection. Mr. Brown says he has seen it in our common blacksnake.

In order to preserve the skin for the museum, it was carefully removed, a process which took two days, so it was about three days after death before I could examine the organs.

The body was that of a well-nourished python (species molurus), 4.30 m. in length and 50 cm. around its thickest portion. The skin was covered with large imbricated scales, made up of a chitinous-like substance. The ventral portion was of a yellowish hue, the dorsal surface being mottled gray and black, following a fanciful design.

Around the pillars of the soft palate, at the side of the isthmus of the fauces, was a collection of mucus. I made some cultures from this on agar-agar and on gelatin, and obtained some growths which under the

microscope proved to be micrococci. There was no inflammatory process in the mouth nor in the œsophagus. The lungs were crepitant and contained no diseased foci either of a primary or secondary nature. The heart was normal, having two auricles and one ventricle, with an incomplete septum. The liver was firm, of a dark-red color, and about 1 m. in length. It also showed no signs of a secondary deposit of any kind. The kidneys, as in all the lower forms of life, were lobulated, and, as is usual in ophidians, were long and narrow.

The supra-renal capsules were quite a long distance from them—about 20 cm. The ovaries and uterus were in good condition, opening into the cloaca in common with the intestine. The intestine was also free from disease. The stomach was the main point of interest. From the exterior, even before I had opened it, I could feel a hard mass as large as a small orange, and an external ulcer was also apparent on the serous surface directly over this mass. On opening the stomach it, like the rest of the alimentary tract, was found to be entirely devoid of food, the only matter present being a little mucus and a few parasitic worms.

The mucous membrane was quite moist and covered with a glairy and viscid mucus, through which the reticulated structure of the tissue could be seen with facility. The stomach measured 48 cm. in length, and 35 cm. at its broadest part.

The hard nodule that had been felt from without was situated at the cardiac end, and nearer the small rather than the large curvature. It was oval in shape and considerably elevated above the surface of the stomach. It measured 14 cm. in length, 8 cm. in width, and was 2 cm. thick. There was a crater-like ulcer, 10.5 cm. in length, running along its greatest axis.

The free surface of the ulcer showed little granules that looked like tubercles; they were not tubercles, however, as I proved afterward by my microscopical studies.

The neoplasm was firm to the touch and cut much like lymphoid tissue. I immediately made frozen sections and stained them with Bismarck-brown and eosin. From these sections I was enabled to decide that it was not cancer, and that the bulk of its substance was lymphoid in nature.

The free surface of the ulceration showed little granules upon it that resembled in no small degree tubercles. Thinking that a specific granuloma might have to do with the growth, I made a culture from one of these on acid agar-agar, and obtained a luxuriant growth in a few days. I made cover-glass preparations from these and found them to be micrococci 2.5 $\mu$ in diameter. And I may here state that they corresponded,

both in form and measurement, with those cultivated from the mucus found in the mouth.

I put the stomach in alcohol, and after it had become sufficiently hard made sections. Those from the different regions of the stomach have already been described, so I will now merely add the histology of the neoplasm.

I imbedded them in celloidin, and cut them in the usual manner after such imbedding. I stained some with carmine, others with hæmatoxylin, and still others after the manner of Gram for bacteria.

I found the new growth to be made up of lymph-cells, fibrous tissue, and some mucous tissue. The lymphoid cells seemed to preponderate over the other elements, the fibrous tissue acting merely as a stroma. It appeared quite vascular, and resembled in a high degree granulation tissue.

The lymph-spaces, as well as some of the capillaries, contained micrococci, which were identical with and measured the same as those described above.

From the foregoing description of the histology of the growth it will at once be seen that we have here to do with an ulcerative process, and from the hyperplasia that it has been of long standing.

That it is probably septic, the microörganisms go to show, since they are found in the lymphatics and bloodvessels, as well as in the free surface of the growth.

Just how, where, and when these bacteria entered the organism, and whence they came, would be hard to say. They are not evidently the forms of putrefaction or suppuration, being larger and having a different individual arrangement.

As has before been hinted, the kind of food could play but a very small rôle in the cause of a process like the above. It is true that the python swallows its food alive, or almost before it is dead, still a rabbit or a rat would be so paralyzed by the great pressure it must needs submit to before deglutition that it could do very little injury after it reached the stomach, even if it were not smothered to death during the long and tedious process of swallowing, as it probably is.

I have it from good authority, however, that sparrows have been heard to chirp after being for some time in the stomach of a boa. The feathers and claws and the undigested portions are, as a rule, vomited, thus showing that they act as foreign bodies there, stimulating the stomach to this reflex act. Very large bodies, however, I do not think could be cast up on account of the teeth, which are set in such a manner as to prevent the regurgitation of food while swallowing.

A boa-constrictor has been known to swallow a blanket through sheer necessity, it having become entangled in the mouth. The teeth held it so firmly that it could not be spit up, and the only way out of the difficulty was to swallow it.[1] The blanket was passed from the bowel some three weeks later in a cylindrical mass that tapered at each end.

Hemorrhagic infarction is one of the great sources of gastric ulcer in man. We have first a conical area of pigmentation due to a precipitation of hæmosiderine from the blood; this is acted upon by the gastric juice of the stomach, which causes a gradual erosion, and finally we get an ulcer, which, in accordance with the length of the process, may or may not have extended clear through the wall of the stomach, and has sharp and defined edges, as though it had been punched out with a conductor's punch.

In this form of ulceration, however, we do not meet with a bacterium, which puts this as a theory of cause beyond the pale of possibility.

The worms found in the stomach probably caused a great deal of irritation, and though they were found *en masse* at the pyloric end, nevertheless they could have originated the inflammatory process that went on to ulceration. And it seems to me a more rational idea to consider them as the exciting cause, rather than accept without further proof a hypothesis of general cause.

To settle this, two experiments can be performed, viz.: Give a python suffering with the earliest symptoms a vermifuge, and watch the results. If the inflammation is due to the presence of the worms it will be alleviated by their removal. Then, if this does not suffice, a germicide may be given, such as powdered naphthalin dusted over the feathers of a bird, or can be given by means of a tube passed into the stomach. The circulation of reptiles is too sluggish to serve the purpose of a hypodermic injection. *February* 27, 1890.

---

### 5. *Miliary tuberculosis and malaria.*

Exhibited by Dr. J. Leidy, Jr.

The specimens which I show to-night were removed from a case in Dr. Longstreth's ward at the Pensylvania Hospital.

The patient from whom these specimens were removed was admitted

[1] For the authenticity of this I am dependent upon no less an authority than Joseph Leidy, M.D., Professor of Comparative Anatomy and Zoölogy in the University of Pennsylvania.

on the 7th of this month, with a temperature of 105.5°, a pulse of 120, and respirations 40 to 46. There was absolutely no history, as the patient was an Italian who spoke a dialect not familiar to any of the other Italians in the ward. He was admitted in a chill, and complained of severe pain across the small of the back and upper portion of the lungs, and constant micturition. As is our custom when a patient is admitted in a chill, we examined the blood. In this case it was found loaded with the corpuscles of Lavaran. It was difficult to make a physical examination at the time on account of his condition. Respiration was rapid; there were numerous moist râles on both sides over the apex and base. The heart-sounds were normal. The percussion resonance was impaired at both bases, and vesiculo-tympanitic at the apices.

In the evening of the same day the man had a second chill. The following morning he had a profuse hemorrhage. It was difficult to say whether it came from the mouth or lungs, but it was thought highly probable that it came from the nose and mouth. During the day the bleeding not only increased, but there was considerable blood in the evacuations from the bowel and also from the urethra. The patient continued to grow worse, and at midnight he died. The examination of the urine, I may say, was negative up to the time that blood appeared in the urine. The specimen obtained two or three hours before death contained a trace of albumin and a few casts.

There were adhesions of the right pleura. With this exception there was no evidence of old disease of the lungs. Both lungs were studded from top to bottom with miliary tubercle. The heart was normal. The spleen, although considerably enlarged, was normal. Blood taken from this organ showed the pigmented bodies. In the left kidney were found numerous abscesses involving especially the pyramids. There were also broken-down patches of ulceration in the pelvis of the kidney at the entrance of the ureter. The right kidney was normal. The bladder was small, although its walls were not hypertrophied. It showed points of ulceration over its surface about the neck and upper portion of the fundus. The prostate was normal. The intestines were normal. There was nothing to account for the hemorrhage from the bowel, which evidently came from the lower portion, as it was of a bright-red color. In the mesentery there were numerous nodules which had not broken down. I cannot say whether they were tubercular or not.

The case is of interest on account of the occurrence of hemorrhage, which is not a common symptom in acute miliary tuberculosis. Especially is it rare occurring from all the mucous membranes of the body. The case is also of interest in connection with the relation between acute

miliary tuberculosis and the preëxistence of a caseous mass in some part of the body. The presence of the corpuscles of Lavaran in an Italian is only what might be expected. All Italians have had malaria, and if they do not show the recent blood-changes they show the older. In this case the temperature was reduced to 103° by quinine. Death was due to exhaustion from the profuse hemorrhage.

Dr. J. Daland: In regard to the question whether miliary tuberculosis can occur without the presence of a cheesy deposit, I may say that, personally, I do not think that it can, although that focus may not be discovered at the post-mortem. I had a good example of that eight months ago, in a strong, muscular man attacked with acute tuberculosis. The starting-point of the disease proved to be a suppurating gland at the angle of the jaw, which was enlarged and caseous. This was the only caseous mass found in the body. *March* 13, 1890.

---

6. *Cleft palate in a lion's whelp.*

Exhibited by Dr. W. E. Hughes.

I have here a lion's whelp which shows a condition quite common among the young of wild animals born in captivity, that is, cleft palate. This is particularly common among the young of carnivora, and is apparently predisposed to by persistent in-breeding and by lack of bone in the food. This is the commonest cause of death in the young of carnivora. *March* 27, 1890.

---

7. *Gunshot injury of head.*

Exhibited by Dr. F. Hinkle.

F. T., of Newbridgeville, York Co., Pa., a farmer, æt. 26 years, came to my office June 17, 1889, to consult me regarding a plastic operation for the restoration of his nose, which had been accidently demolished.

He informed me that four weeks before, his shotgun burst, causing him to fall unconscious to the ground, where he lay for some time. No one was with him save a small boy, who was also prostrated by the explosion. After a time both recovered from the shock and started for

the house, which was half a mile distant. The injured man was completely blinded and cried out wildly, "My eyes are out!" He was bleeding profusely. Two physicians were summoned, who controlled the hemorrhage by cold compresses without discovering that a foreign body was lodged in the head, the patient not suspecting its presence.

For the first two weeks both eyes were closed and the whole face greatly swollen, but after that the swelling subsided and the wound healed.

The only symptoms he experienced were a great pressure and pain in his head, at times causing symptoms of insanity, manifesting themselves

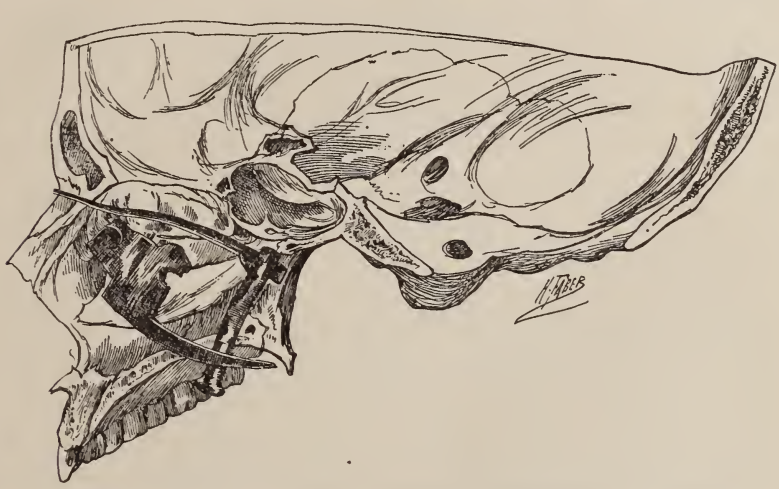


Diagram approximately indicating the position occupied by the foreign body.

in a desire to do violence to persons around him. This feeling, he says, continued until after the operation presently to be described.

On examination I discovered a piece of iron protruding for one-sixth of an inch from the granulations of the healed wound, which I recognized as a piece of the trigger-plate. I informed the patient of the gravity of his case, the risks attending extraction of the body, and the dangerous consequences to which he was liable if it was not removed. He determined to submit to an operation, which I performed in my office with the assistance of Dr. Houston Mifflin, of Columbia.

The parts were laid open freely, when a careful examination revealed the following state of affairs:

The breech, trigger-plate, and screw of the gun had been driven into his skull at the point of junction of the frontal with the nasal bones, fracturing the nasal bones, vomer, and os planum of the ethmoid, passing

back to the body of the sphenoid, and almost to its junction with the basilar process of the occipital bone. The trigger-plate was two and five-eighth inches long and one-fourth of an inch in width; the breech two and one-half inches long, one-half inch wide at the part which fitted into the gun-barrel, and three-fourths of an inch wide at the shoulders. The screw that passed through the stock of the gun, holding the breech and trigger-plate together, was one and three-fourths of an inch long. This whole mass lay between the eyes and under the orbital plate of the frontal bone, extending back to the cribriform plate and the body of the sphenoid.

The bone-forceps were applied to the portion of the trigger-plate protruding from the wound, and it was drawn two inches when it ceased to yield. We soon detected the cause, and changed the direction of the traction downward, so as to let the screw escape from the wound without inflicting injury to the eyes. In a few minutes the whole mass was successfully removed. The hemorrhage was controlled by a strong solution of the subsulphate of iron, first sponging the parts freely with carbolic acid water; then sponges, soaked in the styptic solution, were packed into the wound until hemorrhage ceased.

The patient lay apparently lifeless for several hours, notwithstanding the fact that all possible means were used to restore the action of the heart, which was beating feebly. Respiration apparently ceased at times. These symptoms of syncope repeated themselves during five days and we had little hope of his recovery. On the sixth day the pulse was 66; respiration, 20; temperature, 98.5° F. The skin began to acquire its natural warmth, and from now on the patient progressed toward recovery. He was kept perfectly quiet, and after it was deemed safe to remove the tampon the wound was syringed out with tepid carbolic acid and glycerin water. Subsequently, the edges of the wound were treated with cocaine, carefully trimmed, and the margins of the skin approximated by means of silver wire sutures.

He made a good recovery in eighteen days, so that on July 4th he was able to return home. The patient is to-day perfectly well; his mind and eye-sight are unaffected.

Cases in which large foreign bodies have lodged and remained for so long a time in such vital regions, and from the effects of which the patient has made so rapid and effectual a recovery, are rare. The removal of the foreign body was deemed advisable in spite of the risks attending the operation. It is surprising that no cerebral hemorrhage or meningeal inflammations complicated the case. The specimen, which weighed forty-five grammes, or one and a half ounces, is deposited in Dr.

Formad's collection in the Pathological Laboratory of the University of Pennsylvania. At Dr. Formad's request I exhibit the patient before the Pathological Society of Philadelphia. *May* 1, 1890.

---

8. *Case of general tuberculosis.*

Exhibited by Dr. H. M. Fisher.

Alfred S., æt. 62 years, colored, was admitted to the Pennsylvania Hospital April 4, 1890, on a doctor's certificate of general debility. No history could be obtained from the patient himself that was at all satisfactory, as he was partially delirious. Tongue coated and lips covered with sordes.

Examination of left lung showed a few moist râles at the apex, but nothing more. Urine contained albumin and casts.

*April* 6. Several bedsores over sacrum; passes urine involuntarily. Died this evening.

*Autopsy, made by Dr. Joseph Leidy, Jr., twelve hours after death.*—Infiltration of both lungs and of liver and spleen with caseous masses. A few tubercular masses in each kidney also. Mesentery thickly strewn with tubercular granulations, but no tubercular ulceration of the intestine. Pancreas showed one or two tubercular masses. Tubercular infiltration of the pancreas is rarely seen. The pancreas was, unfortunately, thrown away. *May* 22, 1890.

---

9. *Ulcers of stomach in pythons.*

Exhibited by Dr. J. L. Hatch.

Some time since I exhibited a specimen of ulceration of the stomach from a python. Last Monday I received two pythons of the species regis. The larger snake weighed 4 pounds $10\frac{1}{2}$ ounces, measured $56\frac{3}{4}$ inches in length, and $7\frac{1}{2}$ inches in circumference at its greatest girth. The smaller snake weighed 2 pounds $12\frac{1}{2}$ ounces, measured $55\frac{1}{4}$ inches in length and $5\frac{3}{4}$ inches in circumference. Both these snakes presented the same symptoms as did the snake exhibited some time ago. There was a marked inflammatory process around the gums. The snakes

would blow mucus from the mouth, and died in about forty-eight hours after the symptoms were first noted.

In the larger snake I found the pylorus intussuscepted into the stomach, and when I attempted to pull it out it would return. This was evidently due to the great thickening of the stomach brought about by the great hyperplasia within. The macroscopical appearances of the stomach were the same as those in the first specimen. In the smaller snake the stomach was normal, but at the pyloric portion there was evident ulceration, and in the lower part of the gut there was a tapeworm. This tapeworm I have examined and have shown to Dr. Leidy. It seems to be a species not yet described. It evidently belongs to the genus dibothrium. It has two suckers and there are two pits. The segments are very narrow and can scarcely be distinguished with the naked eye. I have not observed any eggs in the proglottides.

In the case shown some time ago I attributed the ulceration to the presence of lumbricoid worms. I found micrococci in the lymph-spaces and in the bloodvessels and made cultures of them. There did not seem to be sufficient reason to conclude that the ulceration was due to the microörganisms. In these latter cases I have been unable to make cultures, but I have found micrococci in the tissues themselves.

*May* 22, 1890.

---

10. *Probable tuberculosis of the supra-renal bodies.*

Exhibited by Dr. C. WALTERS.

These two supra-renal capsules show an unusual state of disease which may be interesting. The patient was a dement in the Philadelphia Hospital. He had phthisis and some arterial disease. At the post-mortem both lungs were found tuberculous, with a couple of small cavities at each apex. In the kidneys there were a number of cysts, one filled with a yellow mass, probably cholesterin. The supra-renal capsules were in a broken-down condition simulating tuberculosis. I simply show them for what they are worth; there was no bronzing whatever.

*June* 26, 1890.

## 11. *Case of hydatid cyst.*

Exhibited by Dr. J. L. Hatch.

The specimen that I present to-night is one of hydatid cyst of the liver and of the spleen due to the tænia echinococcus. The specimen is from a case in the nervous department of the Philadelphia Hospital, and was diagnosed before death as one of hemiplegia of the right side. At the same time no gross lesion of the brain could be found. The chief features revealed by the post-mortem were chronic pleurisy of the right side, and these hydatids of the liver and spleen, fatty degeneration of the kidneys, chronic cystitis, and complete obliteration of the os uteri.

The hydatid cyst in the liver is a small one, the growth probably being of short duration, although a great length of time is usually required for the complete development. It appears to be of the simple variety—one of the rare forms found in the human subject, but a form which obtains in the ruminants. In the simple hydatid cyst we find the wall formed from the parenchyma of the organ, and standing out from the inner surface of this wall are white particles which under the microscope are found to be the scolices of the tænia echinococcus—the larval tapeworm of the dog. The head consists of four suckers with a double row of hooklets, thirty or forty in number. The worm has the power of withdrawing its head into an envelope.

In the multilocular and more common form we have what are known as daughter cysts—either an endogenous or exogenous growth from the cyst-wall. These daughter cysts contain small granddaughter cysts. Inside are found the scolices of the tapeworm.

This is not a common affection in this climate. It is rather to be found in cold countries like Iceland, where the people are in the habit of living in close proximity to dogs. Dr. Osler has been able to collect some sixty-one cases occurring in this country, an account of which he has published in the *American Journal of the Medical Sciences* for October, 1882. Even in this list one-third of the cases occurred in foreigners.

There was no distinct tumor present, and unless there is a distinct tumor the diagnosis is difficult. The only symptoms are those of pressure on neighboring organs and a sense of pain in the region of the liver. It is claimed by some that on palpating and holding the hand over the region of the hydatid cyst a fremitus is felt, and that when a stethoscope is applied a musical note is heard. This is ascribed to the daughter cysts striking against each other.

These cysts contain a semi-gelatinous substance which is non-albuminous. If some of the fluid can be obtained the absence of albumin will be a diagnostic feature. The fluid is said to contain also grape sugar, inositic and succinic acids, and succinates. The hooklets are the best diagnostic feature. The cestoid gains entrance through the lymphatics and the bloodvessels. Some claim that it may enter through the bile-ducts.

Dr. F. A. Packard: I have seen one case of hydatid cyst of the liver where there was no suspicion of the condition during life. It occurred in a colored woman past middle age, a native of South Carolina or Virginia. She had a cyst about the size of an English walnut on the upper surface of the liver and slightly adherent to the diaphragm. It contained cheesy contents in which, on examination, I found cholesterin plates and a quantity of hooklets. The cyst gave rise to no symptoms and was the only one found in her body.

Dr. Hatch: I may add that these cysts are subject to fatty degeneration and calcareous infiltration. Often you will find post-mortem nothing but a calcareous nodule. Again, the cyst may rupture and set up inflammation, causing the formation of granulation tissue and cicatrization, so that post-mortem you may find simply a dried-up affair where the cyst has been, but examination with the microscope will show the presence of hooklets.

Dr. Judson Daland: I think that there is still another termination of these cysts—that is by rupture and inflammation going on to suppuration, then absorption, with a typical septic temperature ranging from 97° to 105° F. in some cases. *October* 9, 1890.

---

### 12. *Instance of hysterical deception.*

Reported by Dr. J. Daland.

Dr. Daland presented several pieces of tobacco leaves, which were brought him with the statement that they were passed in the urine of a patient, a hysterical woman. One, shown upon a glass slide in a dried condition, measured about 2.5 inches in length, and from 1 inch to 1½ inches in width, looking much as though it were a portion of a cigar wrapper. Other pieces of the same substance were held in weak alcohol.

Dr. Daland remarked that "these foreign bodies were stated as coming in the urine from the person of a hysterical woman, who reported that upon a certain night recently she suffered excruciating pain, and that

after extreme distress in passing her urine she found these bodies in the chamber vessel. They were reported as 'skins from the bladder.' On examination these bodies proved to be nothing other than portions of tobacco leaves. The patient, however, denied on her part the addition of any such substance to the urine, and repeatedly asserted her innocence; the husband also claiming ignorance of the material. Several weeks after the occurrence, however, the woman suggested that possibly these leaves may have been inadvertently dropped into the vessel by her husband, as at the time he had had (although at first denied) a broken cigar in one of his pockets. No further admissions were made, and the case rests at this point."

Dr. M. O'Hara, Sr., mentioned two cases of the presence in the urine of peculiar extraneous material; in neither case, however, because of any intentional fault of the patient. In one case the foreign body proved to be the hind legs of a bed-bug; the other material, at first regarded as cystic oxide, was later found to have been deposited in the urine from the sides of an unclean bottle, which had previously contained iodoform and collodion.

Dr. D. Longaker recalled the case of a young unmarried colored woman whom he had attended in an abortion. Six weeks after the termination of the case the patient brought a membranous object, found in the chamber vessel, which she suggested to be a piece of placental tissue possibly retained. Examination, however, proved it to be a bit of rubber—probably a part of a condom.

Dr. F. A. Packard mentioned a case in which the urine contained the larvæ of insects, the presence of which was unaccountable until the discovery of these same forms in an otherwise empty and clean chamber vessel under the patient's bed demonstrated their origin; the mattress was examined and found to be infested with ordinary bed-bugs, the larvæ dropping out when the mattress was handled.

Dr. E. Laplace, commenting upon the freaks of hysterical cases, stated that within the past few days he had received specimens of fecal material containing peculiar bodies supposed to be membranous in nature, but which on careful examination were found to be portions of orange, which he believed to have been placed in the feces for the purpose of deception.

Dr. Formad, remarking the freaks of hysterics in this direction, stated that he had met with such substances as entrails of chickens and other digestible matters in the feces, placed there with the intention of deception, suggesting the appearance of desquamation of the mucous lining of the bowels. *November* 13, 1890.

### 13. *Acephalic monstrosity.*

Exhibited by Dr. E. Laplace.

Dr. Laplace exhibited before the Society a fœtus from an about eight months' pregnancy, in which the occipital bone was wanting, the dura mater being exposed and the posterior portions of the brain decidedly small. The mother related a rather peculiar history to account for the monstrosity, which was, briefly, as follows: When about six months pregnant her little daughter came running to her with a doll with a flaxen wig, and exclaimed that someone had scalped her dolly. Suiting the action to her words she suddenly pulled off the wig, which had become loose, and exposed the interior of the head to her mother; the doll had a porcelain head, which had no portion to represent the calvarium, and when the wig was torn off certainly suggested the condition exhibited in the fœtus. *March* 12, 1891.

---

### 14. *Parasites in a python.*

Exhibited by Dr. J. L. Hatch.

The case I have to present is one of parasiticism of a python. About a year ago I had an opportunity to show before this Society certain parasites taken from the stomach of a python molluris, and described a micrococcus, measuring 0.5 micro-millimeter in diameter, which was found in the tissues of the wall of an ulcer in the stomach. The python from which the present specimens were obtained was of the same species, and presented much the same condition of the gastric walls as in the previous instance. In the stomachs of two other pythons (species, regis) I have found much the same state of affairs, all these animals having been obtained from the Zoölogical Gardens of this city. In the stomach of the other python molluris were also found a number of parasites, but by no means to as great extent as in this one. I regarded the condition described in these other serpents as probably due to the action of the micrococci upon the gastric walls, but in the present instance there seems to be another factor, in the existence in the stomach of an enormous number of ascarides—worms, the female of which is about four inches in length and the male somewhat shorter—of a pale greenish color

and possessing great vital resistance, some of these parasites retaining life for more than a week after their removal from their habitat in the stomach of the python. These worms were not only free in the stomach cavity in large numbers, but quantities were found buried in the tissues of the gastric wall at a large focus of ulceration, and could be drawn from their hiding-place by forceps.

It will be recalled that in the stomach of the first python I discovered a hitherto undescribed variety of tapeworm of the species dibothrium; in the present instance there were eight of these dibothria. The worm has a double head, each head being provided with a sucker, but no hooklets. The strobile varies in the specimens found from several inches in length to as many feet; the segments are very narrow and close together in the neck, and the gills very numerous. From this last circumstance I have applied the name *dibothrium milliapharyngeus* to the worm. Lower down the segments lap over each other. The genital pore is in the centre of each segment, the genital apparatus radiating from this opening.

Besides these parasites the lungs of the snake were found infested by another form, the pentastomata.

Dr. Dercum stated that gastric ulcers are not infrequently found in snakes as the result of ascarideal infection, and that sometimes the same condition is met in alligators, especially when kept in captivity.

Dr. Davis remarked the unusual course of affairs for a round-worm to give rise to ulcerated conditions in any animal, and asked whether it is not a deviation from its usual habits to be found in any part of the tissues. *April* 9, 1891.

---

## 15. *Anthrax.*

Exhibited by Dr. F. Gummey.

I have here slides obtained from the autopsy of a case of anthrax which recently died in the Pennsylvania Hospital. The patient was a woman, æt. about 45 years, who worked in a woollen mill in the northern part of the city. Three days before her admission she noticed a small pimple on the arm near the elbow, which gave the sensations of heat and firmness. The original pustule upon admission was about the size of the thumb-nail, and appeared as an angry ulcer with raised edges, with several smaller patches about it. Between these smaller ones were blebs filled with serum. The woman complained of pain in

the site of these lesions and shooting up to the shoulder; the joint was swollen and inflamed. Suspecting anthrax from the history of the patient's occupation, a slide was made from the pustule, and large numbers of bacilli were detected without the precaution of staining. The following morning she complained of pain in the abdomen, and presently, at 6 A.M., of pain in the head and back. At this time the temperature was normal; the pulse was somewhat increased in frequency, but much smaller than normal. Shortly after the temperature rose, and at noon all the symptoms were aggravated—the arm was much swollen; but suddenly collapse took place, the temperature fell to 95°, the pulse could not be felt, and death followed.

The blood in all parts of the body was found swarming with bacilli of anthrax; they were found in the urine and other fluids. They were found in the brain and in all the other organs in the body, and numerous emboli and infarcts were to be seen.

The slides which I present were prepared from the serum taken from the original pustule and from the blood of the brain and elsewhere in the body. The brain was intensely congested, so much so that it almost looked as though there had taken place a large hemorrhage into the brain substance. The intestines were also deeply congested. The blood was fluid, no clots being found anywhere.

Dr. Formad: This was an interesting case of genuine anthrax disease, and as the woman died within twenty-four hours of her admission to the hospital, as coroner's physician I had the opportunity of performing the autopsy. On examining the body I found an ulcer on the inner side of the elbow, a marked phlegmon; and it was at once suggested by the resident physician that this had been the cause of death, in which opinion I concurred.

The woman had been engaged in washing and sorting wool, which came from all parts of the world; and from unclean wool it is probable that she inoculated herself in some slight scratch. The post-mortem examination showed a typical case of pyæmia, with embolic infarcts in almost all the organs, in the lungs, in the kidneys, and especially in the spleen. The latter organ was large, soft, and swollen, dark and disintegrating, and of bad odor.

The anthrax bacilli are quite large, and are easily seen with a power of two or three hundred diameters. From their size they might be mistaken for the hay bacillus, but differ from that microörganism by being motionless. No special precautions are required in staining them, and their large size and peculiar manner of joining in chains are characteristic. The condition could hardly be mistaken for the ordinary suppu-

rations, if examination be made, as the latter are due not to bacilli, but to the various pyogenic cocci.

Another peculiarity in the case to which I may call the attention of the Society was the presence of gastric ulceration. At one point there was distinct infarction, and at another (both on the anterior wall) there was a distinct ulcer of recent origin.

The anthrax disease is quite rare in this country, although it is common abroad. *April* 9, 1891.

---

16. *A case of chronic pancreatitis with disseminated fat-necrosis; death by subacute hemorrhagic pancreatitis, simulating a case of poisoning.*

Exhibited by Dr. H. F. Formad.

Miss C. R., a rich old spinster, æt. 70 years, died suddenly in this city. The coroner directed me to look for poisoning, because the history warranted such belief. The deceased lived in the house with only one servant, who at the time of my visit was under police surveillance pending the coroner's investigation. The history of the case was meagre. For years she was said to be subject to dyspepsia, but never employed a physician, not even a homœopath, fearing that she would be poisoned. She was in constant dread of death by poisoning, and left a written order that the coroner investigate in case of her death. The servant, who lived with her for a number of years, stated that the deceased had always been in good health except for about the last two years, when occasional spells of dyspepsia with vomiting after meals set in. She complained of pain to the left of the umbilicus on various occasions. This pain was much intensified of late, and was more apparent after eating. Her appetite was generally good. She used alcohol to a certain extent in the form of cherry wine, it is said, but not in excess. Distinct history of polyuria. The bowels were loose during the last few weeks of her life. However, she attended to her household and business matters to her last day of life, and took a long walk on the evening previous to her death. On the last morning of her life she arose quite ill, had frequent vomiting spells, cold sweats, and sat on the commode every few minutes; died suddenly in the afternoon while in the act of purging.

*Autopsy, eighteen hours after death.*—Body that of a large, fat woman, weighing about 240 pounds. Skin of quite an anæmic appearance and

slightly jaundiced. Sclerotic coats yellowish; rigor mortis very marked. Subcutaneous fat voluminous and extremely flabby. Abdominal fat on section showed it, as well as the whole adipose tissue of the body, to be studded with grayish-white nodules disseminated everywhere. This was also seen in the fat of the extremities, of the chest and back, and in the adipose tissue of the voluminous mammary glands.

I had seen such nodules in other cases that were similar to this, but they were not so numerous, and I did not give them due attention. In this case the enormous fat of the omentum attracted my notice. It was also studded by small nodes located mostly peripherally, but many were deep-seated in the substance of the fat; this corresponded to the cases of fat necrosis which I had the opportunity of seeing through the courtesy of Dr. Hausemann and Prof. Virchow in the autopsy rooms of the Charité, in Berlin. Prof. Cornil, in Paris, had also shown me similar specimens that he investigated about the same time. Previous to this I now remembered to have seen microscopical slides demonstrated by Prof. Fitz, of Boston, at a meeting of the Association of American Physicians shortly before. I at once looked for the pancreas. It was imbedded in a large mass of adipose tissue, from which it could be extricated only with difficulty, partly on account of adhesive bands that tied the pancreas to the surrounding parts. All the fat tissue surrounding this region was studded with the same miliary nodes, which I now recognized as fat necrosis. The pancreas appeared swollen, indurated, and of dark-brown color, due to a uniform hemorrhagic infiltration. The organ had retained its shape, except being somewhat rounder than normal. There did not appear to be anything abnormal with the pancreatic duct to the naked eye, but it was filled with blood.

*Liver* enlarged, weight about four and a half pounds, surface smooth; on section somewhat nutmeg, of light-yellowish color, distinctly greasy, having generally the appearance of a fatty infiltrated liver. The gall-bladder, its contents, and ducts normal. Spleen atrophied, indurated, and capsule showing much fibroid thickening; surface lobulated.

*Kidneys* enveloped in enormous masses of fat, the latter containing numerous foci of fat necrosis.

The kidneys showed chronic interstitial nephritis, being reduced in size below normal; weight, about four ounces each, the left, as usual, larger than the right. Capsule adherent, surface granular, cortex much diminished; the pelvis contained a large amount of adipose tissue with nodules of fat necrosis. Ureters dilated, bladder empty, and mucous membrane thickened, showing distinct rugæ, due to chronic cystitis.

Uterus and ovaries much atrophied, showing no evidence of ever

having been pregnant. The alimentary canal throughout showed a slight catarrhal condition with points of hemorrhagic infiltration. The latter was more pronounced in the stomach, probably on account of the late attacks of vomiting. The stomach was nearly empty, rather dilated, and the mucous membrane presented to the naked eye appearances of an atrophic gastritis.

*Thoracic organs:* Mediastinal and pericardial fat enormously increased, and presented the same nodes of fat-necrosis as elsewhere in the body. *Heart* enlarged; its visceral pericardial layer covered completely with adipose tissue containing the nodules of fat-necrosis; weight of the organ, twelve ounces. Left-sided hypertrophy, with musculature apparently normal, but a right-sided auricular dilatation. Valves and orifices normal, save some thickening of aortic valves and a few atheromatous patches in the ascending part of the aorta.

The heart had stopped in diastole, and besides some currant-jelly clotting in the right chambers of the heart, the blood was fluid.

*Lungs* distended, partly by emphysema at the edges, partly by serous fluid, but outside of this œdematous appearance and some passive congestion, the parenchyma seemed normal, being crepitant throughout.

*Microscopy.*—The nodules disseminated throughout the adipose tissue of the whole body and limited to it were most numerous on the surface of the fat masses. Indeed they appeared most prominent in the subperitoneal connective-tissue layers and elsewhere in the fat-sheaths. The nodules were the size of a small pin-head or that of a miliary tubercle, though many of them were so minute that they only could be detected under amplification. Microscopically they presented an appearance not unlike that of fibroid, cheesy degenerated tubercles. Occasionally there was seen a round-celled infiltration in them—obscured, however, by granular débris and needle-like crystals resembling those of stearic acid. The degree of necrotic change varied in the different nodules; some appeared to be made up entirely of cicatricial tissues, others showed granulation tissue with atrophic fat-cells, fat-crystals, and compound granule cells; while still others, and perhaps the majority, had the appearance of an ordinary coagulation necrosis. In all instances the nodules were well circumscribed, and surrounded by fat-vesicles in progress of atrophy or which presented compressed or shrivelled appearance.

The microscopical changes in the pancreas are as follows: A prominent and uniform hemorrhagic infiltration of all the interstitial connective tissue, the masses of blood corpuscles being located chiefly in the lymph-spaces. The ducts were widely distended with extravasated blood. In

the interstitial connective tissue there was seen a great deal of round-cell infiltration, in addition to old cicatricial tissue, evidently the result of long-standing cirrhosis of the organ. The glandular alveoli appeared atrophied; blood corpuscles are seen within the vesicles, and in many cases blood-pigment that compressed the epithelial cells. In only a few places were there seen glandular alveoli with typical, large, angular cells filling the lumen completely, and with prominent nuclei, such as is characteristic of the normal glandular substance of the pancreas.

In many places there are areas of necrosed tissue, presenting all the appearance of ordinary coagulation necrosis, these areas or nodules measuring from five to twenty millimetres, and corresponding fully to the grayish-white nodes that were seen by the naked eye on section of the organ and in the adipose tissue. These changes were pretty uniform throughout the whole of the pancreas, and certainly must have been sufficient to accomplish a complete cessation of its function.

The question arises as to the mechanism of death in this case. There had been evidently a primary pancreatitis, which had become chronic, as evidenced by the overgrowth of connective tissue in the organ. The atrophy of the glandular structure that followed must certainly have impaired the well-known function of the pancreas, and possibly the excessive accumulation of fat tissue throughout the body may be brought in connection with it. The hemorrhagic infiltration and necrotic changes that subsequently occurred in the new-formed adipose tissue may have led to septic influences, which in return exerted their deleterious effects upon the disabled pancreas, and possibly have led to the results described.

The fatty degeneration of the bloodvessels of the pancreas, which I omitted to state was quite prominent, explains the hemorrhagic infiltration.

I stated before that I have overlooked several cases like this which I have seen, and which I failed to study sufficiently. I have seen, however, hemorrhagic pancreatitis without fat-necrosis. These occurred exclusively in drunkards. I recollect three cases of punctiform infiltration of the pancreas, and two cases of diffused hemorrhagic infiltration.

As regards fat-necrosis, it appears that it occurs principally in elderly, fat persons, as in the present case. This affection certainly deserves more attention than it has received heretofore.

It is very interesting from a medico-legal standpoint, and I am thankful to Prof. R. H. Fitz, of Boston, who first put me on the alert to look for such cases in my medico-legal observations. A misinterpretation of the lesions in the present case might have led to costly and useless

chemical analyses, and to great annoyance to persons associated with the deceased.

For the literature of acute pancreatitis and fat-necrosis, see the monograph by Dr. R. H. Fitz (the Middleton-Goldsmith lecture, 1889) and *Transactions of the Association of American Physicians*, vol. v., 1890.

---

17. *Post-mortem report upon thirty-five cases of extra-uterine pregnancy, with remarks upon the frequency of death from primary rupture of the sac.*

Read by Dr. H. F. Formad.

Gentlemen: On various occasions within the last seven years, I have presented before you most of the specimens above referred to as card specimens. I intend now to make a general summary of all the cases of extra-uterine pregnancy that occurred in my autopsy practice, with details such as my note-books present.

I believe I have shown you that deaths from extra uterine pregnancies are much more common than has been generally supposed.

I have examined post-mortem or witnessed the autopsies of a little over thirty-eight hundred adult women. Among these occurred the thirty-five cases of extra-uterine pregnancy referred to.

I am certain, however, that I overlooked some, especially in former years, and I doubt not that a number of cases that I entered into my book as "peritoneal hemorrhage from causes unknown," or "from probable injury of abdomen," or "rupture of abdominal vessels," "hæmatoceles and varicoceles of tubes," or of "broad ligament" and "uterine hæmatoceles," were, possibly, all extra-uterine pregnancies that I failed to recognize.

In all those cases of young or middle-aged married women that die suddenly in collapse without any previous illness I now look for extra-uterine pregnancy, and my expectation is justified quite often. It must be remembered that only those cases come into my hands that die within twenty-four hours (coroner's law), or those in which there is suspicion of poisoning, abortion, or some form of foul play. Those who under medical care live twenty-five hours or more, or those in whom there is no suspicion of any kind, and all those many rapidly fatal cases in which the physician gives a certificate of "heart disease" while they may

have been ectopic pregnancies—all these cases are lost to record. I also miss those cases that the gynecologists now diagnose and operate on immediately after the rupture of the sac, and thus save the life. Diagnosis of extra-uterine pregnancy during life is made very rarely, however, even after rupture of the sac, for not one of the cases that came into my hands had been diagnosed during life. From these considerations we can approximately figure as to the frequency of occurrence of ectopic pregnancy. I may state that I now class hæmatoceles of the tubes as ectopic pregnancies, even if no fœtus is discovered, for reasons that will be obvious later.

I was not in the position to obtain detailed histories, nor was it within my reach to learn much details about the symptoms that preceded death, but in those instances where this was possible my questions elicited in nearly every case similar answers: 1. Knowledge that the deceased was pregnant. 2. Discharge of blood or membranes from the womb that had alarmed the deceased. 3. A sudden "giving way" of something in the abdomen, or sensation of shock. 4. Sharp pain, "cramps," in the abdomen; vomiting. 5. Fainting, collapse, syncope, and death within five to twelve hours, with only three exceptions in which life was prolonged two or more days.

*Varieties* of ectopic pregnancy met with: *One ovarian; three tubo-uterine* or *interstitial*, and *thirty-one tubal.* (See photographs 1, 2, and 3.)

Of the thirty-one tubal pregnancies, all killed by intra-peritoneal rupture of the sac, which had led in each instance to large fatal intra-peritoneal hemorrhage, I did not meet, post-mortem, a single case of extra-peritoneal rupture of the tube, probably because the rupture of the sac in the latter variety does not kill by immediate fatal hemorrhage. Consequently, such cases last probably long enough to be diagnosed and treated by a physician, or die by a secondary rupture of the sac some time later; at any rate, they are not so likely to come under coroners' jurisdiction.[1]

[1] By an intra-peritoneal hemorrhage, I understand one in which the sac bursts directly into the free abdominal cavity, which naturally would be hopelessly fatal—at least there would be hardly time for a physician to be prepared for immediate laparotomy with successful result.

On the other hand, an extra-peritoneal hemorrhage of the tube is defined as one in which the rupture of the sac and tube takes place between the two layers of the broad ligament, the hemorrhage gravitating posteriorly. Cases of this sort naturally would bleed slowly, the hemorrhage being retarded by the pressure of the peritoneum. As I said, I have never seen cases of this latter class at the post-mortem table, but many specimens of this kind have been handed to me by successful ante-mortem operators. I am not in a position to speak authoritatively, but these are probably the only class of ectopic pregnancies that are diagnosed and saved by operation.

The duration of pregnancy in each of the cases I met post-mortem did not exceed four months, and judging from the size of the sac and fœtus, if found at all, the great majority of the pregnancies were between the first and third months.

In about one-third of the cases I failed to recover the fœtus; indeed, it is quite difficult to find the small object in the large masses of clotted blood that usually distend the abdominal cavity. On the other hand, the fœtus may have undergone atrophy, especially in those tubal hæmatoceles where the sac does not exceed the size of an almond-shell. (See photograph No. 2.) Yet, they must be pregnancies, because the sac contains fœtal membranes and the cavity of the womb invariably contains a decidual membrane, or very plain remnants of one, if previously expelled. Microscopical examination confirmed this in every instance.

The situation of the sac in the tubal forms was in most instances near the extremity of the Fallopian tube, or sometimes about the middle. It was just as frequently on the left as on the right side. The sac had been ruptured in all instances, and the fœtus expelled with the blood. The rupture appears to have taken place in most cases at the placental attachment.

In every case there was chronic salpingitis, the adhesions in many cases binding the impregnated tube to one side, or to the posterior part of the uterus, or to the viscera surrounding the latter.

Three cases were, as I stated, of the tubo-uterine or interstitial variety (see photograph No. 1); by this I mean that the sac was located at the exit of the Fallopian tube from the uterus, although plainly within the tube. None of these three cases was fatal immediately, life being prolonged after the rupture from two to five days, the hemorrhage being probably of a slow character.

The women in all my cases were between twenty and forty years of age, all belonging to the working-class or were housewives in moderate circumstances (coroner's cases rarely occur in the better classes). Without exception they were multipara or had previously aborted. At the time of the fatal seizure the women were usually doing some work, such as washing, house-cleaning, carpet-shaking, or lifting, when the rupture of the sac would take place with the symptoms before described.

In most of the cases no physician was in attendance; or if one was, his services were too late. Suspicion of poisoning or criminal abortion were entertained in many of these cases, and, in fact, in two of these unfortunate women attempts at a criminal abortion had been resorted to, which probably hastened the rupture of the sac.

In but few cases had I any difficulty at arriving at a conclusion before

opening the body, after hearing the history of the case, because of my former experience.

The bodies at the autopsy appeared highly anæmic, abdomen much distended, and rigor mortis well pronounced. Opening of abdomen revealed at once a quart to gallons of clotted blood and serum. In two instances the fœtus popped out from the abdominal cavity with the escaping blood-serum immediately on incision.

In all instances where the fœtus was found at all, it was in a location quite remote from the sac. The uterus was usually somewhat enlarged and contained a decidua *in toto*, or remnants of the same.

All the organs of the body were usually quite anæmic, the heart having stopped in diastole. Mucous membrane of stomach in most cases showed ecchymosis, probably the result of vomiting. Lungs distended and sometimes œdematous. Other lesions were found in individual cases that had no special connection with the fatal results. I must state that none of the cases showed any signs of peritonitis, save two of the interstitial ectopic pregnancies, in which life had been prolonged for some days.

The solitary case of ovarian pregnancy that I encountered was one not exceeding three weeks' gestation; the right ovary contained a hemorrhagic mass with rupture of its capsule, and without being able to find the embryo anywhere. The mass of new-formed tissue in the ovary contained plainly fœtal structures, as shown upon careful microscopical sections, that were also scrutinized by some of the experienced eyes of my colleagues. The uterus was somewhat enlarged and showed a distinct, fully developed decidua. There was chronic salpingitis, but no other alterations in the Fallopian tubes.

I do not wish to go into the literature of this subject at the time, but the existence of ovarian pregnancy is of late regarded as an established fact, though not universally believed in.

(See table and photographs with this report.)

FORMAD'S SERIES OF EXTRA-UTERINE PREGNANCIES. Photo. by Geo. Stout, M. D. Natural Size.
No. 1. Tubo-Uterine Pregnancy, with Intra-Peritoneal Rupture of Sac. Death after five days.

FORMAD'S SERIES OF EXTRA-UTERINE PREGNANCIES. Photo. by Geo. Stout, M. D. Natural Size.
No. 2. Haematocele of Tube, result of ectopic pregnancy. Decidua seen in Uterine Cavity.

FORMAD'S SERIES OF EXTRA-UTERINE PREGNANCIES. Photo. by Geo. Stout, M. D. Natural Size.
No. 3. Tubal Pregnancy, with Intra-Peritoneal rupture of Sac. Death after Ten hours.

## *Analysis of Thirty-five Cases of Extra-uterine Pregnancy, from Autopsy Records by* Dr. H. F. Formad.

In all cases death was due to the primary rupture of the sac and intra-peritoneal hemorrhage. Cases 1 to 31 inclusive are tubal pregnancies. Cases 32, 33, and 34, are tubo-uterine; case 35 is an ovarian pregnancy. All but the last four cases are arranged chronologically, and occurred among 3800 autopsies upon adult women in Philadelphia, within a period of eight years. Nearly all the specimens are preserved in the Pathological Museum of the University of Pennsylvania. ("Pavilion" indicates the distal end of Fallopian tube.)

| No. | Age | Nationality. | Supposed cause of death as reported. | What doing at the time. | Number of pregnancies. | Number of abortions. | Time that elapsed from fatal seizure to death. | Situation of sac. | Size of sac, long diameter, and probable duration of pregnancy. | Fœtus found or not. | Approximate quantity of blood in abdominal cavity. | Condition of uterus and tubes. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | American. | Internal hemorrhage. | House cleaning. | 2 | 0 | 12 hours. | Right tube close to uterus. | 1½ inch ; 3d month. | Not found. | 3 quarts. | |
| 2 | 29 | German. | Cholera morbus. | Washing. | 4 | ? | 9 " | Middle of left tube. | 1½ " 3d " | Found. | 3 " | |
| 3 | 28 | German. | Gastritis. | Shaking carpets | 3 | 0 | 8 " | Right pavilion extremity. | 1 " 2d " | Found. | 2 " | Decidua present; chronic salpingitis. |
| 4 | 35 | Irish. | Heart failure. | ? | 5 | 3 | 5 " | Middle of left tube. | 1 " ? | Not found. | 3 " | |
| 5 | 30 | German. | Abortion. | Working. | 3 | 2 | 10 " | Right tube near uterine extremity. | 1¼ " ? | Not found | 4 " | |
| 6 | 31 | American. | Cholera morbus. | House cleaning | 2 | ? | 3 " | Left pavilion. | 1 " ? | Not found. | 2½ " | |
| 7 | 27 | Colored. | Abortion. | Washing. | 4 | 0 | 6 " | Right pavilion. | 1¼ " 2d " | Found. | 3½ " | Decidua absent; chronic salpingitis |
| 8 | 29 | American. | Poisoning. | ? | 2 | 2 | ? | Whole of left tube. | 2 " 4th " | Found. | 4½ " | |
| 9 | 36 | German. | Abortion. | Washing. | 5 | 1 | 13 " | Left tube near pavilion. | 1¼ " ? | Not found. | 5 " | |
| 10 | 31 | German. | Heart disease. | House cleaning. | 3 | 0 | 7 " | Whole of right tube. | 3 " 4th " | Found. | 2 " | |
| 11 | 22 | American ? | Peritonitis. | Fighting. | 2 | ? | 7½ " | Left pavilion. | 1½ " 2d " | Found. | 4 " | |
| 12 | 28 | German ? | Abortion. | Washing. | 5 ? | 0 | 10 " | Right, near pavilion | 2 " 3d " | Found. | 3 " | Decidua present; chronic salpingitis. |
| 13 | 29 | Hebrew. | Poisoning | ? | 4 | 0 | 5 " | Left middle of tube. | 2 " 3d " | ? | 4 " | |
| 14 | 40 | Irish ? | Poisoning. | Washing. | 3 | 3 | ? | Right mid. of tube. | 2 " ? | ? | 3 " | |
| 15 | 33 | American. | Gastritis. | Working. | 2 | 4 | 9 " | Right uterine end of tube. | 1½ " 3d " | Found. | 2 " | |
| 16 | 29 | German. | Abortion. | Cooking. | 2 | 2 | 13 " | Right pavilion. | 1½ " 3d " | Found. | 1½ " | Decidua absent; chronic salpingitis. |
| 17 | 35 | German. | ? | ? | 3 | 0 | 3 " | Right pavilion. | 2½ " 3d " | Found. | 3 " | |
| 18 | 36 | American. | ? | ? | 4 | 0 | ? | Left uterine end of tube. | 1 " 2d " | Not found. | 2 " | |
| 19 | 23 | American. | Heart disease. | Housework. | 1 | 1 | 7 " | Left uterine end. | 2½ " ? | Not found. | 5 " | |
| 20 | 20 | American. | Internal hemorrhage. | Working at sewing machine. | 1 | 0 | 8 " | Right pavilion. | 1¾ " 3d " | Found. | 4 " | |
| 21 | 40 | Irish. | Heart failure. | Housework. | 5 | ? | 5 " | Right uterine end. | 2 " 3d " | Found. | 5 " | Decidua present; chronic salpingitis. |
| 22 | 33 | Colored. | Poisoning. | Washing. | 3 | ? | 4½ " | Left, near pavilion. | 1¼ " 2d " | Found | 3 " | |
| 23 | 35 | American. | Abortion. | ? | ? | ? | ? | Right, near pavilion | 1¼ " ? | Not found. | 2 " | |
| 24 | 24 | German. | ? | Had a fall. | 2 | 2 | 5 " | Right, mid. of tube. | 1 " ? | Not found. | 4 " | |
| 25 | 25 | Mulatto. | Cholera morbus. | Washing. | 3 | ? | ? | Left pavilion. | 1½ " 2d " | Found. | 3 " | |
| 26 | 25 | American. | Internal injuries. | Had a fall. | 2 | 1 | ? | Left, middle of tube. | 1¾ " 2d " | Found. | 4 " | |
| 27 | 33 | German. | ? | ? | 3 | ? | 8 " | Right, mid. of tube. | 2 " 3d " | Found. | 2½ " | Decidua partly absent. |
| 28 | 37 | German ? | Acute gastritis. | Housework. | 4 | 2 | 11½ " | Left, n'r uterine end | 2¼ " 3d " | Found. | 1 " | |
| 29 | 28 | American. | ? | House cleaning. | 3 | 0 | 9 " | Left uterine extremity of tube. | 2 " 3d " | Found. | 1 " | Decidua present; chronic salpingitis. |
| 30 | 40 | American. | Poisoning. | ? | 2 | 3 ? | 6 " | Left pavilion. | 2½ " 3d " | Found | 2 " | |
| 31 | 25 | English. | Abortion. | Washing. | 1 | 0 | 7 " | Whole of left tube. | 3 " 4th " | Not found. | 5 " | |
| 32 | 33 | Irish ? | Heart failure. | Washing. | 3 | 0 | 5 days. | Tubo-uterine l. side. | 1½ " ? | Not found. | ½ " | [gitis. |
| 33 | 39 | German. | Abortion. | House cleaning. | 4 | 4 | 2 " | Tubo-uterine r. side. | 2 " 3d " | Found. | 1 " | Decidua absent; salpin- |
| 34 | 26 | American. | Poisoning. | ? | 1 | ? | 3 " | Tubo-uterine l. side. (See photograph.) | 1¼ " ? | Not found. | ¼ " | Decidua in uterus; chronic salpingitis. |
| 35 | 23 | American. | Gastritis. | Housework. | 1 | 0 | ? | In left ovary. | 1½ " ? | Not found. | 2 " | |

## X. TECHNIQUE.

### 1. *Simple methods of photographing with the microscope.*

Read by Dr. B. A. Randall.

The praises of photography direct from the microscope have been already sung by men whose success in the employment of this means gives the best possible support to their claims of its value,[1] and the number of those who are using it is daily growing; yet there remain a large number of microscopists who fail to perceive its merits, or who regard the matter as lying outside of their field of work. They look rather scornfully at the best photographs of microbes or diatoms over which photographic experts grow enthusiastic, and incline to regard as a failure any photograph which falls short of giving the conventional picture of the diagrammatic drawings of the text-books. Even when unprejudiced examination has shown the exquisite fidelity and the diagrammatic clearness which may be obtained by photography, they still regard it as the province of the photographic enthusiast rather than of the practical microscopist. One reason for this is that they rarely see direct photographic illustrations used in actual publications, since it must at once be conceded that the reproductive methods now available are far from satisfactory; but probably the most potent obstruction to the widening of the use of photography is the prevalent impression that good results are obtainable only at great expense of time and money. Men glance, for instance, into Sternberg's treatise, only to lay it down with a sigh because all this apparatus is unobtainable; and, overlooking all that may be said about simple or improvised appliances, they resign all thought of entering the field.

Such considerations long withheld the writer from essaying the attractive task; but a single demonstration by Dr. Piersol of the possibilities of work by lamplight at once removed his misgivings and opened up the matter to him; and later work has fully confirmed him in the view that there is no reason why any microscopist should not obtain photographic pictures surpassing the highest skill of the draughtsman,

[1] Vide Piersol, Medical Photography, Trans. Phila. Path. Soc., xiii. p. 243.

not only in their unimpeachable accuracy, but even in their schematic sharpness. And as the demand increases for the direct reproduction of such pictures, there is every reason to believe that the mechanical arts will succeed in furnishing them with a perfection and a cheapness which no present method affords. It may safely be predicted that the time will come when photography will be employed to represent adequately all that the microscope can *show*, and that drawings will be needed only to demonstrate the points which *may be inferred, but cannot be seen* in the preparation.

The two questions that most concern microscopists are: What apparatus is necessary in order to obtain good results? and, How may good photographs be gained with a practicable expenditure of time?

Let the beginner first decide what he specially wishes to photograph, and he will be wise not to choose the most difficult possible subject at the outset. Microbes that are almost beyond the highest resolving power of his instrument do not offer the most favorable opportunities for success, however attractive they may be in this "cocco-phobic" age —objects that are resolved rather by the brain than the objective had better be deferred until some experience has been gained. Low-power work—too generally neglected—with good, clear sections, well-stained and thin, forms a more reasonable starting-point; and here apparatus of almost absurd simplicity will be all-sufficient. Some sort of camera is requisite; and, while it may be improvised, most men will do better to buy one of the many forms in the market, some of which are especially designed for this purpose. A "long draw" is a great convenience, since it permits of much choice in the amplification and size of the field, but it may be substituted by several cones of different lengths for uniting the camera to the microscope. These cones are easily made of pasteboard or any light-tight material, and constitute the only peculiar essential to photomicrography. Any camera and any microscope thus linked together may be successfully used, and no great skill is requisite in order that the usefulness may be limited to no narrow field. Good objectives are, of course, essential to first-class work, and any defects in transparency, definition, correction for color, or flatness of field, are apt to show in the results. But specially corrected lenses, like heliostats and other special appliances, are unessential, though valuable, and may be left to the expert who has unlimited time and money to devote to the matter, and aspires to the infallible conquest of every object which may be presented to him. The practical microscopist who takes up photography not as an end, but as a means, will usually find that his stand

and lenses are equal to his needs in achieving good results, perhaps the very best, within a fair range of subjects.

As an illumination sunlight is probably unapproachable, not only in its possibilities, but in the extreme simplicity of its employment. "But I have no daytime to give to the work," may seem a crushing answer to that; yet there are few microscopists who in the course of a week could not find one hour of leisure while the sun shone, and one hour of sunshine well used may give thirty or forty exposures, with the possibility of as many good negatives. The north light, which serves so admirably for most microscopical work, must be abandoned in favor of a window into which the sun shines; and, in the absence of a specially adapted table, an inch plank, about six feet long by a foot wide, must be so adjusted that the sunlight shall fall upon the mirror of the microscope as it stands upon it, with the tube horizontal and connected with the camera. A vertical position is possible, of course, and may be compulsory in case the microscope-stand has no joint for horizontal inclination, and some fluid preparations may perhaps be thus better managed. In any event, it will be found convenient to secure the camera to the board or table-top by small blocks and buttons, and it can then be used in any position, and when out of service may be stood up in a corner. For powers under 100 diameters, the reflection of the sun by the plane-mirror of the microscope, without any accessory apparatus, is all that is required —no condenser is requisite, and without it the heat-rays need not be cut off by a blue-cell. A mirror placed a couple of feet behind the ground-glass of the camera (a standing toilet-glass answers admirably) is a great aid in adjusting the illumination, the field, and the approximate focus—then the fine adjustment is made with the aid of a magnifying glass. For this last purpose one of the microscope oculars deprived of its eye-lens serves admirably, its tube being just the right length to allow of accurate focussing of the rough inner surface of the ground-glass. For very high-power work a smoother surface than is furnished by the ordinary ground-glass of the camera is said to be requisite, but for moderate powers this answers perfectly. On either side of the true focus the image appears stronger and better defined than at the right point, because its outlines have an appreciable breadth instead of being mathematical lines—"where the image seems to melt into the ground-glass" (Piersol) is the point of most perfect adjustment.

Unless the distance to which the image is projected is short, the arm will not reach the fine adjustment so as to allow of the necessary accurate focussing. Dr. Piersol's arrangement is, therefore, advisable—of a cord with weights carried across the head of the fine-adjustment screw

(taking a turn around it, if it move stiffly), and passing through rings on the base-board, to be carried back along the edge, where it will always be within reach. A similar arrangement for the rack and pinion is rarely needed, since almost perfect focus can be made while standing by the microscope and looking in the mirror back of the ground-glass. glass. As this mirror allows in the same way of exact adjustment of the field to be photographed, no arrangement need be made to detach the microscope so as to search for this with the ocular. In photographing, an ocular may be used to increase the power, or an amplifier may be introduced into the tube; but the beginner will do better to work without either until he has learned to use his objectives by themselves, and has found them in need of such aids.

An improvised apparatus for photographing with sunlight.

As to the exposure—use the slowest plate obtainable (such as Carbutt's A), as it gives the greatest latitude, and give the shortest time that will afford a picture—vigorous development will then give a crisp negative with strong contrasts. If your negatives lack this quality, ask an expert photographer about them, or perhaps take him one or two to develop with you. The microscopist had better develop his own plates—any spare time can be utilized for it, and if night-time be chosen, any room with only a red light in it becomes a photographic dark-room. But he had better have a dark-room, if only a suffocating closet, since he can thus test at once the accuracy of his exposure, etc., and make another

trial before changing his apparatus, if the first has not been satisfactory. A negative can be covered up light-tight in its developing-pan, while the operator runs in and out continuing his work, making new exposures, and trying new subjects; but mottling of the plate may result if it is left in the developer without occasional agitation. Such methods are unsystematic and indefensible from a photographic point of view; but the busy microscopist may find that he can by such unwarrantable measures sometimes treble the number of his successes without notably lessening the value of any one of them. Thus developing, one here and there, of a series which he wishes to make, the microscopist can photograph thirty or more preparations in a single hour of good sunlight; and as he puts away his apparatus at its close, he can count four or five finished negatives, and some two dozen exposed plates that give promise of being as good as soon as he finds time to develop them. If this time is lacking, they may be turned over to a professional photographer, as may also the tedious process of making paper prints from the negatives.

How long to expose will always be the cardinal question, and the learner will generally be disappointed at the vague answers he receives from the expert. Hold to one brand of plate (the same emulsion if possible) and one developer, as giving two constants in the problem, and note carefully the lens, the distance to which the object is projected, and the clearness of the atmosphere when the exposure is made; and study your results with an expert when you can. Over-exposure is most usual in working with sunlight, and the developer needs restraining. "Bromide of brains is the best restrainer." In making the exposure some opaque object may be held so as to cut off the light from the mirror while the slide is withdrawn, the exposure made by moving it aside and again interposing it, and then the plate-holder is closed once more. In the writer's work using a 1″ Reichert lens with good sunlight and Carbutt A plates (sensitometer 10), and obtaining an amplification of 25 diameters, the correct exposure is about one-fourth of a second. The light is inversely as the square of the projection distance—so with similar conditions, except double length of draw and 50 diameters, the exposure should be one second. A quick hand can limit the exposure to one-fourth of a second or less—as short as has been found necessary —but a drop-shutter can be improvised to give a smaller fraction when desired. Summer sunshine is several times as rapid as that of winter; that of noon is far faster than when the sun is low; very little haze in the atmosphere lessens greatly the actinic power. These are facts in a problem that must be left to the judgment of the operator.

The field embraced in the picture is often an important matter,

requiring considerable attention, and care must be taken that the plate shall receive all the essential portion of the image visible upon the ground-glass. To this end, the point corresponding to the centre of the plate when exposed should be marked upon the ground-glass, and a circle drawn around this to mark the minimum dimensions of each size of plate to which the camera is adapted. Since the margins of the plates as bought are frequently faulty, the circle had better be only three inches for a $3\frac{1}{4}$ x $4\frac{1}{4}$ plate, etc.; though the full size of the plate can often be used without unwise economy. The draw-tube of the microscope is generally furnished with a diaphragm, which is of value in giving definition and flatness of field, but reduces materially the size of the field; the entire draw-tube can, therefore, be removed at times in order to bring the periphery of an object into view without any serious compromise of the sharpness.

The method of work thus laid down has one cardinal difference from every other—it is working with the parallel rays of sunlight, and the effect is practically to photograph the disc of the sun with the preparation silhouetted against it. Every opacity which intervenes between the sun and the sensitive plate will make its mark upon the negative—dust on mirror, slide, or lens, scratches on the lens front or bubbles in the balsam between the lenses, floating moats in the air, perhaps even sun-spots, will show in the result. Stringent cleanliness is therefore requisite. To outweigh these disadvantages, the penetration thus obtained in a thick preparation, by the searching character of the light, will at times far surpass the performance of the same lens with an ocular; while, on the other hand, detail that is out of focus will often be drowned out by the flood of light—just as by the Abbé condenser when used to seek stained microbes in the tissues. A thick, poorly differentiated specimen may thus give a good photograph; yet well-stained, thin and even sections are none the less preferable. Although non-actinic colors have great theoretical advantages, admirable pictures can be obtained from hæmatoxylon preparations. Orthochromatic and other stained plates, as well as Dr. Piersol's method of actinic contrast, may prove a great addition to our refinements; but these are points which need not concern the beginner, who will do better to concentrate his attention on the simpler methods.

If the microscopist must confine himself to night-work, his task will be more difficult. Any lamp will serve as a source of light, and a little night-lamp, costing twenty-five cents, has been the writer's choice. It is to be placed, with its flame turned edgewise, in the line of the microscope tube, and, except for very low powers, some concentration

will be required. For this purpose a bull's-eye or some form of sub-stage condenser, or both, will be needed. One of the objectives can be adapted as a sub-stage condenser, or the B ocular, which Dr. Piersol recommends, may be so employed, if the microscope lacks an Abbé or other regular apparatus; but with any form the problem of an evenly and strongly lighted field will demand careful, painstaking solution. The heat-rays emanating from even a tiny flame can by no means be neglected; or the operator may find his balsam melting, and a most singular streaky picture resulting from movement of the specimen while the exposure is going on. A mere piece of interposed plane-glass or isinglass will cut off much of the heat, or a blue-glass may be used below the stage, but at times the cell of ammonio-sulphate of copper may be needed. Rapid plates are in place for this work, since the time of exposure must always be considerable—averaging at least as many minutes as the sunlight required seconds. A convenient dark-room, however, will enable the operator to carry on several processes at once, and two dozen good negatives may often be made in an evening. With powers above 100 diameters the writer has done rather better work with lamplight than with sunlight; but this is because he has never prepared himself for high-power work. Concentration of the light is needed for such work, and can be used with safety to the objective and preparation only when the heat-rays have been eliminated—a matter easier with lamplight than with sunlight.

A few words in recapitulation. By securing a camera, with a cone to connect it with his microscope, a piece of plank, a developing solution, some hyposulphite of soda, a ruby light, a few pans, and some dry plates, the microscopist has the needed outfit for beginning his photographing. The outlay will be from $20 up, but may be greatly lessened if the camera is made, borrowed, or bought second-hand. Fastened to its base-board, the camera may stand out of the way in a corner until wanted; then in five minutes all can be gotten into readiness for work. The apparatus is to be so placed that the sunlight falls upon the plane substage mirror (projected out of the window if necessary), and the light reflected into the instrument. The standing mirror is placed at the far end of the apparatus, so that the operator as he stands by his microscope can see the ground-glass reflected in it; then it is easy to adjust the illumination, find and centre the field, and get an approximate focus. Accurate focussing is then done with the aid of a magnifying glass, and the plate-holder charged with its sensitive plate is substituted for the ground-glass. An opaque object is held so as to cut off the sunlight while the slide is drawn, is removed and replaced, so as to make

the brief exposure desired, and then closing his plate-holder, the operator detaches it, and seeking his dark-room proceeds to develop his negative and reload. A miss may call for another shot—a hit will open the way to a long series of results more or less successful. Taking careful note (written as well as mental) of each exposure, the microscopist will quickly become master of one situation at least; and, while he must expect varied fortune when he changes the conditions and enters unknown territory, he will find much of it open to ready conquest, and having once entered the field, he will not quickly be willing to quit it. Let him begin with sunlight and a good low-power objective, and he will quickly achieve brilliant results, which the expert can hardly excel; and even though he makes no attempt to enter other fields, he will find that he has made a most valuable addition to his powers as a microscopist. *November* 14, 1889.

---

2. *The rapid and easy removal of the spinal cord.*

Read by Dr. A. H. P. Leuf.

The points which I shall present I do not claim as original, but they are the result of three and one-half years' experience in making autopsies for the coroner of Brooklyn and for several hospitals. I have seen much time consumed in the removal of the cord, and it has seemed to me that this was largely due to the fact that the operator did not go to work in the proper manner.

About two years ago, Dr. Angstel, of Indianapolis, wrote a paper on this subject, in which he exaggerated the difficulties of the removal of the spinal cord. I do not say that this was intentional, for he was a recent graduate with not much experience in this line. He suggested that the cord might be taken out by having a vertebrated cylinder which could be run down the spinal canal through the foramen magnum, and that the cord could be divided at its lower extremity by some simple contrivance, but he did not state how this simple contrivance would act. This led me to write a short paper, which appeared over a year ago in the *New York Medical Journal.*

I have never had any trouble in the removal of the cord, and it can be taken out by a person with no experience in a time that is usually considered phenomenal by most practitioners. The body must be in proper position. The best position is, I think, with the arms folded

under the chest and the head hanging down over the edge of the table. I make a long incision over the spinous processes and then make an incision through the muscles on each side down to the laminæ. I do not peel the muscles back. The saw which I use is curved at the end, so as to ride over the curves in the occipital and lumbar regions. A point that must be borne in mind is the varying direction of the laminæ in the different portions of the spine, the rule being to apply the saw at right angles to the direction of the laminæ. In this way we open the spinal canal as largely as possible, and leave no sharp edges of bone.

Another point is to cut entirely through the bone. Some books recommend that the laminæ be cut half through and the section completed with the chisel. This, however, consumes time. In the method suggested the sawing is completed in two or three minutes. The supra-spinous ligament is next divided, and the end of the costotome put under and the two sections raised. It is sometimes necessary to detach the vertebræ in the lumbar region.

I have taken out several hundred cords, and I do not know of one case in which I lacerated the dura. You can saw recklessly. This is particularly true in the cervical and lumbar regions.

The next step is to pull on the dura mater and make a transverse incision at the lower extremity of the cord. The cord is then raised and the nerve-roots divided and the knife passed under the cord so as to separate it from the vertebræ.

Anyone following this method can take out the cord in fifteen minutes.

Dr. A. V. Meigs: We have been in the habit of holding the saw perpendicular in dividing the laminæ in all portions of the spinal column. If the opening thus made is not sufficient it can be enlarged by breaking away the bone with a chisel. I think that it requires from ten to twenty minutes to remove the cord in this manner.

Dr. Judson Daland: In Vienna they have a man who removes the cords, and he has become so expert that he can take out a cord in four minutes. They go in anteriorly, using a specially prepared chisel and a huge mallet. They commence at the lumbar vertebræ, and by the expenditure of a great deal of force reach the foramen magnum in a short time. They rarely injure the cord. It seems to me that the method posteriorly is more satisfactory, especially in private practice, as it makes much less noise. Dr. Leuf assisted me in a post-mortem for Dr. Mills, and in that case not more than ten minutes were occupied in the extraction of the cord. *March* 13, 1890.

### 3. *A new staining method for nervous matter.*

Read by Dr. A. J. Smith.

The following method for staining nervous material was devised with a view of overcoming one of the objectionable features in the well-known Weigert's method. The latter process, for its best results, should be continued over several days for the various steps, and requires the use of continued moderate heating with the preparatory immersion for two days in the copper solution. The length of time, the continuous use of heat, and the extreme caution in the preparation of the brain and cord, as well as the care necessary in the different steps, are all features obviously open to objection at the hands of the general pathologist.

In the method which the writer proposes, the original Weigert hæmatoxylon solution is retained so far as the elements are concerned, but the proportions are somewhat altered in order to hasten the procedure. The following proportions have been used with excellent results:

| | |
|---|---|
| ℞.—Hæmatoxylon . . . . . | 1 to 1 5 parts. |
| Alcohol . . . . . | 10 " |
| Aquæ dest. . . . . | 90 " |
| Sol. aq. lithii carb. sat. . . . . | 10 " |

The hæmatoxylon should be dissolved in the water by the aid of gentle heating, the alcohol and solution of lithium added when cool.

In this fluid sections are placed without previous preparation, the cord having been hardened in the usual solution of bichromate of potash or in Müller's fluid. In from three to five minutes, by the aid of gentle heating, sections of cord have taken a deep-purple color, and may then be removed to a wash of water containing two or three parts of lithium carbonate solution, where they assume a blue-black color almost immediately. They are at once submitted to the differentiating process, consisting of successive baths in equal parts of a saturated solution of ferric chloride and water, and in a solution made by adding to a 4 or 5 per cent. solution of hydrochloric acid, sulphanilic acid to saturation. In the iron bath they may remain for from two to four or five minutes, a deeper shade manifesting itself. Placed thence into the sulphanilic acid solution, differentiation takes place within five or six minutes, the result being very like that obtained by Weigert, the white matter presenting a steel-blue or blue-black color, the gray matter and areas of sclerosis and degenerative changes being colorless or of a very pale yellow hue. Differentiation, if not complete within the limits given,

may be brought about by repeating the iron and sulphanilic acid baths. The sections are next washed carefully in water, dehydrated in absolute alcohol, cleared in xylol or bergamot, and mounted in balsam as usual.

Histologically, the axis-cylinder alone receives the stain—the ganglion cells in the cord taking the stain badly as a rule. A counter-stain may be used with success, as Congo-red, or alum-, picro-, or lithium-carmine.

The especial advantages claimed for this method are readiness of employment, absence of complications, ease of procedure, and thoroughness of differentiation. It is possible that the best staining by Weigert is more delicate in its results, although a careless or unskilful manipulator would produce far better results with the above. The difference between the results even in experienced hands is, however, but slight—and the many advantages suggested may be an excuse for the introduction of this as a new method.

Dr. John Guitéras: This method of staining is an important addition if we can be satisfied that it is successful, but this cannot be easily established. The advantage of the Weigert method is that it stains everything that we expect it to stain, and always leaves unstained what we know it does not stain. It stains the white substance of every nerve and stains nothing else. We must be sure that the stain is a positive one—that it stains every nerve with white substance and leaves unstained everything else.

It seems to be very similar to a stain suggested by an Italian for staining elastic tissue.

Dr. A. V. Meigs: There is one method of staining which has not been mentioned. It was devised by a German—I think, Schultze—and introduced into this city by Dr. Piersol, and makes use of carminate of soda. It gives results in certain directions not obtained by the Weigert method. I have sections of the same cord stained by both methods. There is great enlargement of the axis-cylinders. Weigert's method fails to demonstrate this, while the carminate of soda method shows it perfectly—so much so that I have had photographs made from it. I think the fault of the Weigert method is that it stains the white substance so black that you cannot distinguish the outlines of the axis-cylinder. The Weigert method makes a good stain for the lower powers, but for high powers I do not think that it can be compared with the carminate of soda or a good boro-carmine stain. *February* 13, 1890.

## XI. CARD SPECIMENS.

1. Atheroma of coronary arteries. W. L. Coplin. The specimen was sent me by a friend, without any history. It is a heart, and the coronary arteries are like pieces of bone. February 27, 1890.

2. Internal strangulated hernia from an old person dying of obstruction of the bowel. H. F. Formad. June 26, 1890.

3. Gunshot injury of the heart, the ball passing through the back and causing instantaneous death. H. F. Formad. June 26, 1890.

4. Abortion. H. F. Formad. This was a case of abortion with laceration of the cervix, which was sufficiently severe to produce inflammation and septicæmia. This young woman had carried the child six months, and also had Bright's disease. The latter was probably more fatal than the abortion. In the absence of Bright's disease she might have recovered. September 25, 1890.

5. Suffocation of a baby, probably intentionally produced. The specimens showed particularly a widespread occurrence of ecchymotic patches over the serous membranes, especially well seen over the pleural membrane and in the peritoneum. H. F. Formad. November 13, 1890.

6. Meckel's diverticula and Köllicker's omphalic appendages. In this instance there had resulted from its existence an intussusception of about six or eight inches of the bowel. In the same case there was shown a perforation of the appendix vermiformis. H. F. Formad. November 13, 1890.

7. Prolapsed uterus with elongated cervix, taken from the body of a woman, æt. 60 or 70 years, who had died suddenly on the street from cardiac disease. The uterus was but a small one, although the cervix was about five or six inches in length, and protruded from the vulva at least two inches; the protruding portion was covered by a skin-like mucous membrane, hard and thick. Dr. Formad remarked that such cases are sometimes mistaken by the ignorant for hermaphrodites. H. F. Formad. May 27, 1891.

8. Dermoid cyst of the ovary, about the size of a pigeon's egg, containing hair and a tooth. H. F. Formad. May 27, 1891.

9. Larynx, from suffocation. *a*. The larynx, laid open anteriorly, and having caught in the opening between the vocal cords a conical piece of apple, point down, about an inch in length and a half-inch in diameter at the base. *b*. The same, with an iron screw in similar position. H. F. Formad. May 27, 1891.

# INDEX.


ABBOTT, G., miliary tuberculosis of peritoneum and lung, 47
Abdominal cavity, free fibroma in, 234
wall, abscess of, 327
myoxma of, 322
Abortion, 366
Abscess of brain, 281, 284
hepatic, 28, 82, 86, 97
of liver from perforating ulcer of stomach; extension into lung, 54
of liver, amœba coli in, 99
perinephritic, 115
Abscesses, hepatic, multiple, 28
Acephalic monstrosity, 342
Adams, J. H., discussion, 101
Addison's disease, 243, 287
Address of President, 1–3
Amœba coli, 99
Amyloid kidney, 184
Anders, J. M., sarcoma of liver and omentum, 25
Aneurism of aortic arch, sacculated, 147
of aorta, communicating with pulmonary artery, 111
descending portion of thoracic, 120, 162
dissecting, hemorrhage into pericardium, 129, 141
thoracic, 125, 149
ulceration into trachea, 141
of heart, 133, 140, 152
Animals, renal lesions in, 183
Anomaly of heart, 142, 173.
of kidney, 154
of pulmonary valve, 142, 161
of uterus and vagina, 223
Anthrax, 343
Aorta, sacculated aneurism of arch, 147
aneurism of, communicating with pulmonary artery, 111
descending part of thoracic, 120, 162
thoracic, 125, 149
with ulceration of trachea, 141
dilatation of, 148, 150
Aortic regurgitating cardiac hypertrophy, 133
stenosis, cardiac hypertrophy, 131
Appendix vermiformis, perforation of, 52, 78, 220
Arsenious acid poisoning, 51
Arteries, atheroma of coronary, 366
Artery, thrombosis of femoral, 160
Arthritis, gelatinous, 8
tubercular, 15
Ashhurst, John, Jr., gelatinous arthritis, 8
Atheroma, advanced general, 154
of coronary arteries, 366
Atrophic eye, calcification of vitreous, 327

BALDY, J. M., discussion, 49, 125, 178, 195, 227
fibroma of uterus, 228
free fibroma in abdominal cavity, 234
Ball, M. V., cancer of breast, 239
discussion, 279.
epithelioma of glans penis, 236
sarcoma of kidney, 191.
Beates, discussion, 154, 220
Berlet, J. F., aneurism of thoracic aorta, 125
Choctaw fever, 43
discussion, 266
Biliary calculus, obstruction of cystic duct, etc., 28
calculi, 50, 77, 86, 95, 208.
Birney, intestinal lesions of starvation, 38
Black tongue, 95
Bladder, calculus of, 173
rupture of, 192
sacculated, 172
Bloodmaking and circulatory system, 111
Bodamer, G., discussion, 266
Bone, necrosis of temporal, 9
Brain, abscess of, 284, 285
gumma of, 250
Chinese, 252
Brains of idiots, 285

Breast, cancer of, 237, 238, 239
Brooke, B., cancer of stomach, metastasis of pancreas and liver, 55
phthisical cavity communicating with pleural space, 167
porencephalus, 268
Brooks, W., symmetrical perforating ulcers of stomach, 56
Brush, E. U., discussion, 40
Burn, duodenum from case of, 61
Burr, C. W., black tongue, 95
discussion, 86, 261, 267, 284

CALCIFIED vitreous of eye, 327
Calculus, biliary, obstruction of duct, etc., 28, 50, 77, 86, 95, 208
of bladder and ureter, 173
of kidney and ureter, 175
vesical, 179
Cancer of breast, 237, 238, 239
of liver, 84
and pancreas, 84
and peritoneum, 51
of œsophagus, gastrostomy, 80
of pancreas, 24
of rectum, colotomy, 31
of stomach, 17, 18, 20, 93, 110
and meningitis, 79
primary; secondary cancer in pancreas and liver, 55
Carbolic acid poisoning, 51
Carcinoma, pathology of, 306
Cardiac aneurism, 133, 140
hypertrophy, aortic regurgitation, 133
stenosis, 131
valvular disease, pulmonary infarction, 128
valvular disease, dysentery, 22
multiple embolism, 117
Cartilage in knee-joint, floating, 7.
Cattell, H. W., anomaly of pulmonary valve, 161
large white kidneys, 172
sarcoma of peritoneum, 290
Cerebellar hemorrhage, 242
Cerebellum, tumor of, 269
Cerebral hemorrhage, 244, 248
gumma, 250
Charlton, —, umbilical hernia, 85
Chest, partial perforation of, in phthisis, 166
Chinese brains, 252
Choctaw fever, 43
Cholecystitis, ulcerative, perforation into colon, 90
Cholesteatoma, 84
Circle of Willis, multiple thrombi of, 268
Circulatory and blood-making system, 111
Cleft palate in lion's whelp, 334
Collins, J. H., discussion, 142
Colon, dysenteric ulceration and perforation of, 62
Colotomy, cancer of rectum, 31
Coplin, W. M. L., abscess of abdominal wall, 327
aneurism of heart, 140
appendicitis, with perforation, 52
atheroma of coronary arteries, 366
cancer of breast, 237, 238
discussion, 12, 134, 178, 295
intra-uterine fibroid polyp, 215
neuromata from stumps, 266
sarcoma of skin, 297
strangulated femoral hernia, 47
tumor of breast, 237
Cord, rapid removal of spinal, 361
Coronary arteries, atheroma of, 366
Corrigan pulse, 22
Corrosive sublimate poisoning, 51, 98
Cyanide of potassium poisoning, 51
Cyst, hydatid, 339
of ovary communicating with bowel, 206
dermoid, 366
Cystic kidney in fœtus, 184
in hog, 183
Cysts of ovary, 205, 218, 220

DALAND, J., aortic stenosis, cardiac hypertrophy, 131
calculous disease of kidney, calculus in ureter, 175
discussion, 15, 124
dysenteric ulceration of colon with perforation, 62
hysterical deception, 340
miliary tuberculosis of peritoneum and lungs, 47
pseudo-leukæmia, 134
typhoid fever, 41
Davis, E. P., discussion, 260
large ovarian tumor simulating pregnancy, 215
Davis, G. G., discussion, 46, 94, 125, 214
floating cartilage in knee-joint, 7

Deaver, J. B., cancer of œsophagus, gastrostomy, 80
cancer of rectum; colotomy, 31
discussion, 49, 110, 130, 137, 163, 174, 182, 198, 204, 238, 239, 278
extra-dural hemorrhage, 262
sarcoma of testicle, 235
Dercum, F. X., tumor of cerebellum, 269
discussion, 343
Dermoid cyst of ovary, 233
Digestive system, 17
Dilatation of aorta, 148, 150
of stomach, 77
Diverticulum of ileum, 93
Downes, A. J., biliary calculus, 95
discussion, 198
perforated appendix, 78
spleen after splenotomy, 114
Dunmire, G. B., discussion, 12
Duodenal lesion from a case of burn, 61
Dysentery, 22, 60
amœba coli in, 99
with perforation, 62

ECTOPIC pregnancy, 209, 221, 224, 225, 229, 349
Egbert, S., discussion, 289
Elephant, pericarditis in, 129
Embolism, multiple, cardiac valvular disease, 117
Empyema, 166
Endocarditis, acute, 146, 158
chronic, 140
in phthisis, 116
Enteritis, tuberculous, 59, 105
Epithelioma of glans penis, 236
of head of mouse, 299
of uterus, 219
tubular, 324
Eshner, A. A., cancer of stomach, 20
discussion, 104, 170
gouty kidneys, 199
tuberculous peritonitis, 96
Exophthalmic goitre, 170
Eye, atrophy of, calcified vitreous, 327

FAT-NECROSIS, 345
Femoral artery, thrombosis of, 160
hernia, strangulated, 47
Fever, choctaw or jungle, 43
typhoid, 41, 64
puerperal septicæmia simulating typhoid, 210
phthisis simulating typhoid, 167
Fibrolipoma of nuchal region, 323
Fibroma, intra-uterine polypoid, 215
of labium majus, 209
of uterus, 218, 220, 228
in abdominal cavity, free, 234
Filaria from a dog's heart, 146
Fisher, H. M., abscess of liver, 82
discussion, 152
gumma of temporo-sphenoidal lobe, 250
mitral and aortic disease, splenic infarctions, 126
pneumonia and pericarditis, 164
sarcoma of mediastinum, 301
sarcoma, multiple, 304
tuberculosis, general, 337
Flick, L. J., discussion, 167
Floating cartilage in knee-joint, 7
Fœtus, multiple tumors in, 302
Foreign body in œsophagus, 109
Formad, H. F., abortion, 366
abscess of brain, 284
address of president, 3
amyloid kidney, 184
aneurism of aorta, 129, 141, 149
of heart, 133, 152
anomaly of heart, 142
dermoid cyst of ovary, 366
discussion, 44, 56, 94, 104, 124, 137, 182, 213, 215, 217, 222, 223, 227, 231, 239, 259, 265, 286, 296, 341, 344
duodenum from case of burn, 61
ectopic pregnancies, 209, 349
endocarditis, chronic, 140
epithelioma of head of mouse, 299
fat-necrosis, 345
fracture of skull, without the ordinary symptoms, 14
fractures of skull, 10, 60
fright, lesions of, 248
gunshot injury of head, 13
of heart, 366
hemorrhage into pericardium from dissecting aneurism, 129, 141
hernia, strangulated internal, 366
umbilical, 85
hypertropy of stomach wall, 52
Meckel's diverticulum, 366
necrosis of temporal bone, 9
ovarian cyst communicating with bowel, 206
plastic pleurisy and pneumonia, 169
poisoning cases, stomachs from, 51
corrosive sublimate, 98

Formad, H. F., poisoning cases — opium, etc., 77
renal anomalies, 189
sarcoma of kidney, 194
of peritoneum, 298
starvation intestinal lesions, 37
stomach, rupture of, 60
suffocation, 168
of a child, 365
larynx from a case of, 365
tubular epithelioma, 324
uterus, prolapsed, 365
Fracture of skull, 10, 14, 60
Freeman, W. J., discussion, 89
Fright, lesions of, 248
Fussell, M., cancer of stomach, meningitis, 79
discussion, 101, 159
ectopic pregnancy, 229
cystic kidney in fœtus, 184
plastic pleurisy, 164
trismus nascentium, 241

GALL-STONES, 50, 77, 86, 95, 208
Gall-stone, occlusion of duct, etc., 28
Gastric cancer, 17, 18, 20, 55, 93, 110 and meningitis, 79
ulcer, 102
opening into spleen, 23
extension into lungs, abscess of liver, 54
in python, 328
in starvation case, 37
ulcers, symmetrical perforating, 56
Gastrostomy in œsophageal cancer, 80
Gelatinous arthritis, 8
Genito-urinary system, 172
Gibbes, H., pathology of carcinoma, 306
Girvin, R. M., 53, 54
Glandular tumor, calcareous, 300
Glans penis, epithelioma of, 236
Goitre, phthisis and exophthalmic, 170
Gouty kidneys, 199
Griffith, J. P. C., discussion, 53, 136, 144, 217
Guitéras, J., discussion, 250, 364
Gumma of temporo-sphenoidal lobe, 250
Gummey, F., anthrax, 343
rupture of bladder, 192
Gunshot injury of head, 13, 334
of heart, 365
Gynecological specimens, 224

HÆMATOSALPINX, 222
Hairy tongue, 95
Hamann, J., discussion, 198
Hatch, J. L., cancer of liver and pancreas, 84
cerebral hemorrhage, 244
Chinese brains, 252
hydatid cyst, 339
malformation of uterus and vagina, 223
parasiticism in python, 342
stomachs from poisoning cases, 51
ulcer of stomach in python, 328, 337
Head, gunshot injury of, 13, 334
Hearn, W. J., discussion, 81, 240
tumor of cerebellum, 269
Heart, aneurism of, 133, 140, 152
anomaly of, 142, 161
gunshot wound of, 365
Hemorrhage into cerebellum and ventricles, 242
cerebral, 244, 248
extra-dural, 262
into pericardium from dissecting aneurism, 129, 141
Hemorrhagic pericarditis, perinephritic abscess, 115
Henry, F. P., address of president, 1
aneurism of aorta communicating with pulmonary artery, 111
of aortic arch, sacculated, 147
calcareous glandular tumor, 300
dilatation of aorta, 148
discussion, 48, 134, 135
mitral stenosis, 143
Hepatic abscess, 82, 86, 97
extension into lungs, origin from gastric ulcer, 54
abscesses, multiple, gall-stone, etc., 28
cancer, 51, 84
obstruction, 28
Hernia, strangulated femoral, 47
internal, 365
umbilical, 85
Hinkle, F., fibrolipoma of nuchal region, 323
myxoma of abdominal wall, 322
gunshot injury of head, 334
Hodgkin's disease, 134
Hoffman, J., sarcoma of kidney, 194
Holmes, E. W., discussion, 259, 265
Hughes, W. E., cancer of stomach, 55
cleft palate in lion's whelp, 334
discussion, 12, 43

Hughes, W. E., empyema, 166
intussusception, 53
partial perforation of chest in phthisis, 166
ulcer of stomach perforating into lungs, abscess of liver, 54
Hydatid cyst, 339
Hydronephrosis, 173
Hydrosalpinx, 218
Hypertrophic cirrhosis of liver, 43
Hypertrophy of gastric wall, 52
of heart, aortic regurgitation, 133
aortic stenosis, 131
valvular disease, pulmonary infarcts, 128
Hysterical deception, 340

IDIOTS, brains of, 285
Ileum, diverticulum of, 93
Infarction of lung, cardiac hypertrophy, valvular disease, 128
of spleen, acute endocarditis, 58, 126
Injury of head, gunshot, 13, 334
Intestinal obstruction, 42
simulated by uræmic symptoms, 176
tuberculosis, 59, 105
Intra-uterine fibroid polyp, 215
Intussusception, 53
Izard, W., biliary calculi, 50

JOINT, floating cartilage in knee-, 7
gelatinous disease of, 8
tubercular disease of, 15
Jungle fever, 43

KAHN, J., cancer of stomach, 17, 18
cancer of peritoneum and liver, 50
Keen, W. W., discussion, 280
Kidney, amyloid, 184
anomaly of, 154
calculous disease of, 175
polycystic, in fœtus, 184
sarcoma of, 191, 194
single, 181, 243
Kidneys, contracted, 192
gouty, 199
large white, 172
tuberculosis of, 200
Knee-joint, floating cartilage in, 7
Koch's lymph in tubercular arthritis, 15

LABIUM majus, pedunculated fibroma of, 209
Laplace, E., acephalic monster, 342
discussion, 16, 40, 49, 58, 94, 142, 174, 213, 286, 299, 341
pericarditis in elephant, 129
uræmia simulating intestinal obstruction, 176
Leidy, Jr., J., acute opium poisoning, dilated stomach, biliary calculi, 77
cardiac hypertrophy, valvular disease, pulmonary infarction, 128
chronic valvular disease of heart and multiple embolism, 117
discussion, 14
multiple thrombi of circle of Willis, 268
ovarian cysts, 205
tuberculosis and malaria, 332
Leuf, A. H. P., rapid removal of spinal cord, 361
Lion's whelp, cleft palate in, 334
Lipoma of nuchal region, fibromatous, 323
List of members, vii
of officers, v
of specimens, xv
Liver, abscess of, 82, 86, 97
from perforating ulcer of stomach, extension into lung, 54
multiple, 28
hypertrophic cirrhosis of, in jungle fever, 43
and omentum, sarcoma of, 25
and pancreas, cancer of, 85
secondary cancer of, 55
and peritoneum, cancer of, 51
sarcoma of, 19
Lloyd, J. H., porencephalus, 281
pyonephrosis, 193
tubercular arthritis, 15
Longaker, D., discussion, 341
Lungs, infarction of, cardiac hypertrophy, valvular disease, 128
and peritoneum, miliary tuberculosis of, 47

MALARIA and general miliary tuberculosis, 332
(jungle or Choctaw fever), 43
Mammary gland, cancer of, 237, 238, 239
tumors of, 237

Marshall, C., puerperal septicæmia simulating typhoid fever, 210
Meckel's diverticulum, 365
Mediastinum, sarcoma of, 301
Meigs, A. V., aneurism of descending thoracic aorta, 120
biliary calculus, obstruction of cystic duct, etc., 28
discussion, 45, 86, 227, 296, 362, 364
procidentia uteri, hydronephrosis, calculi of bladder, 173
typhoid fever, 64
Meningitis and cancer of stomach, 79
Mercury poisoning, bichloride of, 98
Metzler, G., bilateral ovarian new growths, 232
Miliary tuberculosis and malaria, general, 332
of peritoneum and lungs, 47
Miller, D. J. M., abscess of liver, 97
discussion, 101, 169, 232
endocarditis, acute, splenic infarction, 158
thrombosis of femoral artery, 160
ulcer of stomach, 102
Mills, C. K., cerebellar hemorrhage, 242
discussion, 275, 282
Mitchell, J. K., epithelioma of uterus, 219
Mitral stenosis, 143
Monster, acephalic, 342
Mouse, epithelioma of head of, 299
Müller, A. F., aneurism of aorta, ulceration of trachea, 141
discussion, 58
multiple congenital tumors of fœtus, 302
Musser, J. H., advanced atheroma, 154
cancer of stomach, 93
discussion, 76, 168, 182, 217, 235, 265
dysentery, chronic, 22
endocarditis, acute, 116, 146
filariæ from dog's heart, 146
tuberculosis of kidneys, 200
uræmia, 190
Myxoma of abdominal wall, 322
Myxomata, multiple congenital, 302

NECROSIS of temporal bone, 9
Neilson, T. R., discussion, 81
Nephrolithiasis, 179
Nervous system, 241
Nervous tissue, new stain for, 363
Neuromata from stumps, 266
Noble, C. P., discussion, 194
five extra-uterine pregnancies, 225
Nuchal region, fibro-lipoma of, 323

OBSTRUCTION, hepatic, 28, 30
intestinal, 42
simulated by uræmia, 176
Œsophagus, cancer of, gastrostomy, 80
foreign body in, 109
O'Hara, M., Sr., discussion, 178, 341
Omentum and liver, sarcoma of, 25
Opium poisoning, dilated stomach, biliary calculi, 77
Organogenic energy of tumors, 292
Osseous system, 7
Ovarian cysts, 205, 218
bilateral, 232
communicating with bowel, 206
tumor simulating pregnancy, 215
Ovary, dermoid cyst of, 233
large tumor of, 224

PACKARD, F. A., cancer of stomach, 110
dilated aorta, 150
discussion, 40, 61, 89, 104, 134, 162, 180, 231, 234, 340, 341
hepatic obstruction, 28
uræmia, 190
Palate in lion's whelp, cleft, 334
Pancreas, cancer of, 24
and liver, cancer of, 84
secondary cancer of, primary cancer of stomach, 55
Pancreatitis, chronic, 345
Parasiticism in python, 342
Parotid gland, tumor of, 220
Penis, epithelioma of, 236
Pepper, W., hepatic obstruction, 28
Perforation of appendix vermiformis, 52, 78
of chest in phthisis, partial, 166
Pericardial hemorrhage from dissecting aneurism, 129, 141
Pericarditis in elephant, 129
and pneumonia, 164
hemorrhagic, perinephritic abscess, 115
purulent, 130
Perinephritic abscess, hemorrhagic pericarditis, 115
Peritoneum, sarcoma of, 290, 298
and liver, cancer of, 51
and lungs, miliary tuberculosis of, 47

Peritonitis, plastic, 89
tuberculous, 96
Photographing with microscope, some simple methods of, 354
Phthisical cavity communicating with pleural space, 167
simulating pneumothorax, 164
Phthisis, acute endocarditis in, 116
and exophthalmic goitre, 170
partial perforation of chest in, 166
tubercular pleurisy in, 168
Pleural space, phthisical cavity communicating with, 167
Pleurisy, plastic, 164
and pneumonia, plastic, 169
and phthisis, tubercular, 168
Pneumonia and pericarditis, 165
and plastic pleurisy, 169
Pneumothorax simulated by phthisical cavity, 164
by pneumonia and pericarditis, 165
Poisoning cases, stomachs from, 51
arsenic, 51
carbolic acid, 51
corrosive sublimate, 51, 98
cyanide of potash, 51
opium, 77
Polyp, intra-uterine fibroid, 215
of labium majus, 209
Porencephalus, 268, 281
Potassium cyanide poisoning, 51
Pregnancy, large ovarian tumor simulating, 215
ectopic, 209, 221, 224, 225, 229, 349
President's address, 1, 3
Price, J., discussion, 84, 89, 223
ectopic pregnancy, 221
fibroid of uterus, ovarian cyst, hydrosalpinx, 218
gynecological specimens, series of, 224
hæmatosalpinx, 222
pyosalpinx, 222
subperitoneal fibroids of uterus, 220
Procidentia uteri, hydronephrosis, vesical calculi, 173
Pseudo-leukæmia, 134
Puerperal septicæmia simulating typhoid fever, 210
Pulmonary infarcts, chronic cardiac valvular disease, 128
valve, anomaly of, 142, 161
Pyonephrosis, 193
Pyopericardium, 130
Pyosalpinx, hæmatosalpinx, 222, 224
Python, parasiticism in, 342
gastric ulcer in, 328, 337

RANDALL, B. A., discussion, 9, 10, 12
simple methods of photographing with the microscope, 354
Rectum, cancer of, colotomy, 31
Reed, B., epithelioma of uterus, 219
Renal anomalies, 189
calculi, 175, 179
in sheep, 183
lesions in animals, 183
tuberculosis, 200
Respiratory system, 164
Rosenau, M. J., intestinal obstruction, 42
sacculated bladder, 172
Rothrock, J. L., hemorrhagic pericarditis, 115
sarcoma of liver, 19
ulcer of stomach opening into spleen, 23
Rupture of bladder, 192
of stomach, 60

SACCULATED bladder, 172
Sarcoma of kidney, 191, 194
of liver, 19
of mediastinum, 301
multiple, 304
of omentum and liver, 25
of peritoneum, 290
of skin, alveolar, 297
of testicle, 235
de Schweinitz, G. E., discussion, 240, 276
Septicæmia simulating typhoid fever, 210
Sinkler, W., discussion, 276
Skin, alveolar sarcoma of, 297
Skull, fracture of, 10, 14, 60
Slocum, H. A., gastric cancer, 110
Smith, A. J., abscess of brain, 281
atrophy of eye; calcified vitreous, 327
discussion, 57, 62, 105, 153, 196, 240, 286, 289
diverticulum of ileum, 93
dysentery, 60
organogenic energy of tumors, 292
renal lesions in animals, 183
stain for nervous tissue, 363
tuberculous enteritis, 59

Smith, A. J., ulcerative cholecystitis, perforation into colon, 90
Solis-Cohen, S., black tongue, 95
discussion, 213
exophthalmic goitre and phthisis, 170
hypertrophy of heart, aortic valvular disease, 133
phthisical cavity simulating pneumothorax, 164
tuberculous enteritis, 105
peritonitis, 96
Specimens, card, 365
Spinal cord, rapid removal of, 361
Spleen after splenectomy, 114
Splenic infarction from acute endocarditis, 126, 158
Starvation, intestinal lesions of, 37
Stain for nervous matter, new, 363
Steinbach, L. W., cancer of stomach, 20
Stengel, A., amœba coli, 99
anomaly of kidney, 154
atheroma, advanced general, 154
cancer of pancreas, 24
dermoid cyst of ovary, 233
discussion, 169
sarcoma of omentum and liver, 25
tuberculosis of kidney, 200
Stenosis, aortic, cardiac hypertrophy, 131
mitral, 143
Stomach, cancer of, 17, 18, 20, 55, 79, 93
dilatation of, opium poisoning, biliary calculi, 77
rupture of, 60
ulcer of, 102
opening into spleen, 23
perforating, extension into lungs, abscess of liver, 54
ulcers, symmetrical, perforating, 56
wall, hypertrophy of, 52
Stomachs from poisoning cases, 51
Suffocation of a child, 365
larynx from, 365
specimens from, 168
Supra-renals, probable tuberculosis of, 338
Symmetrical perforating ulcers of stomach, 56
System, circulatory and blood-making, 111
digestive, 17
genito-urinary, 172
nervous, 241
System, osseous, 7
respiratory, 164

TÆNIA mediocanellata, 27
Taylor, H., foreign body in œsophagus, 109
Taylor, S., cancer of stomach, 93
Temporal bone, necrosis of, 9
Testicle, sarcoma of, 235
Thrombi of circle of Willis, 268
Thrombosis of femoral artery, 160
Thurnam's aneurism, 111
Tongue, black, 95
Trismus nascentium, 241
Tuberculin in tuberculous arthritis, 15
Tuberculosis of the intestines, 59, 105
general, 337
general miliary, and malaria, 332
of kidneys, 200
of peritoneum, 96
of peritoneum and lung, 47
of pleura, phthisis, 168
of suprarenals, 338
Tuberculous arthritis, 15
Tumor, calcareous glandular, 300
of cerebellum, 269
multiple congenital, 302
organogenic energy of, 292
Tuteur, —, aneurism of aorta, 162
Typhoid fever, 41, 64
simulated by phthisis, 167
by puerperal fever, 210
Tyson, J., Addison's disease, 287
discussion, 45, 48, 50, 57, 75, 132, 174, 176, 213
diverticulum of ileum, 93
ulcerative cholecystitis, 90

ULCERATIVE cholecystitis, 90
Ulcer of stomach, 23, 54, 56, 102, 328, 337
Umbilical hernia, 85
Uræmia, 190
simulating intestinal obstruction, 176
Ureter and bladder, calculi of, 173
and kidney, calculi of, 175
Uteri procidentia, hydronephrosis, vesical calculi, 173
Uterus, epithelioma of, 219
fibroid polyp of, 215
fibroma of, 218, 228
fibromata of, subperitoneal, 220
prolapse of, 365
and vagina, anomaly of, 223

VAGINA and uterus, anomaly of, 322
Valve, anomaly of pulmonary, 161
Valvular cardiac disease, multiple embolism, 117
disease with splenic infarctions, 126
Vansant, E. L., contracted kidneys, 192
discussion, 45, 48, 240
gouty kidneys, 199
tubercular pleurisy and phthisis, 168
Varicose aneurism of Thurnam, spontaneous, 111
Vesical calculus, 179
Vitreous, calcification of, 327

WALTER, C., pyopericardium, 130
probable tuberculosis of suprarenals, 338
Westcott, T. S., gelatinous arthritis, 8
Willard, De F., tubercular arthritis, 15
Willis, multiple thrombi of circle of, 268
Wilmarth, A. W., brains of idiots, 285
Wilson, J C., discussion, 75, 288
Wilson, W. R., multiple congenital myxomata, 302
Wolff, L., abscess of liver, 86
Addison's disease, 243
discussion, 51
nephrolithiasis, 179
plastic peritonitis, 87

YOUNG, J. K., pedunculated fibroma of labium majus, 209

LI
COLLE
OF

RARY OF THE
E OF PHYSICIANS
PHILADELPHIA

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

| DUE | RETURNED |
| --- | --- |
| OCT 15 1947 | OCT 15 1947 |

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.